VOL. 76 NO. 12

textile bulletin

DECEMBER • 1950

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Commerce R. R.

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A MICROSCOPE SHOWS THE DIFFERENC

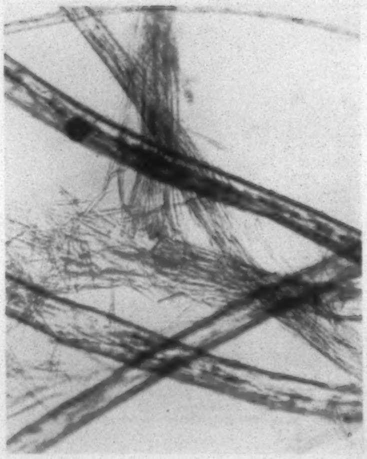
— between —

ORR

Chemically Treated and untreated

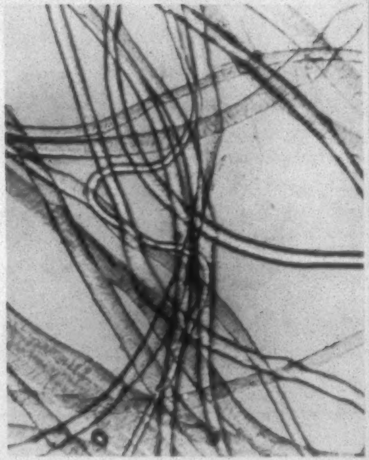
SLASHER CLOTH

after similar runs



ORDINARY SLASHER CLOTH

The untreated wool fibre has disintegrated and has caused the slasher fabric to fail, resulting in down time, dusty yarn and off-quality dressing — problems that can be eliminated in YOUR slasher room once and for all by standardizing on ORR Slasher Cloth.



ORR SLASHER CLOTH

Note the difference in ORR chemically treated Slasher Cloth after similar use. This cloth *resists* bacteria and steam degradation, holds its width, dresses the yarn properly, starts fast, lasts long, maintains level production at all times.

More And More Southern Mills Are Changing To ORR Slasher Cloth

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Represented by

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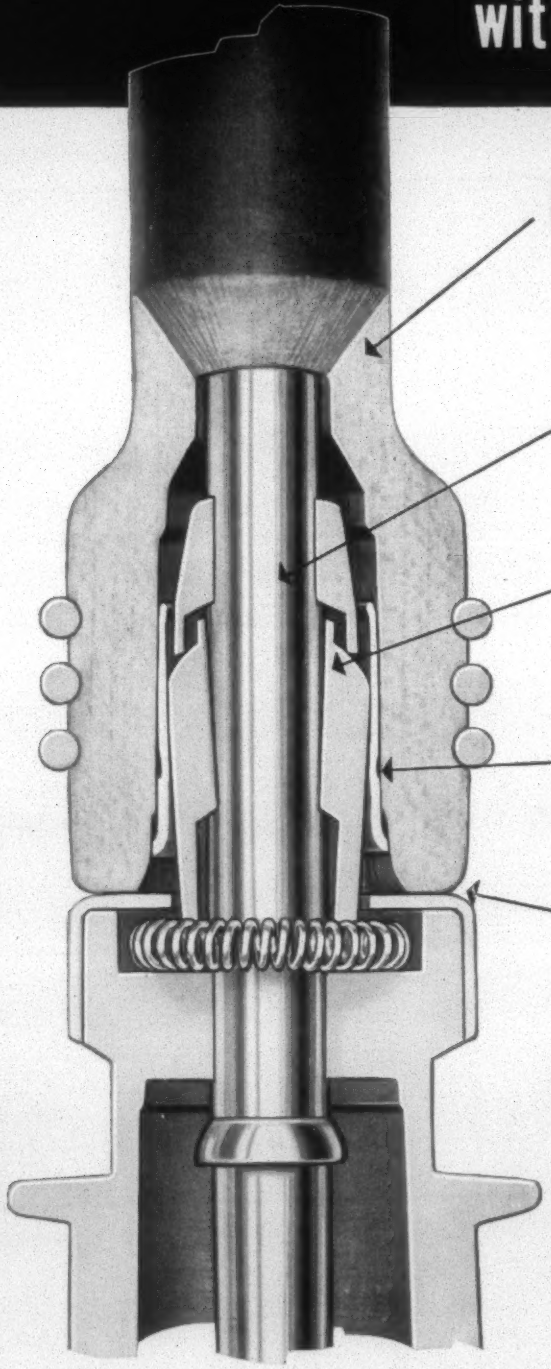
South Carolina Rep.: P. W. Coleman, P. O. Box [illegible], Greenville, S. C.

New England Rep.: J. E. Fuller & Co., [illegible], New Bedford, Mass.

Modern CLUTCH SPINDLES and BOBBINS
with STIMPSON RIB BUSHING



Less Wear on Bobbin
and Spindle

Prevents Bobbin
"Riding Up"

Stimpson
Rib
Bushing

Easier Doffing

● Use a modern Draper clutch spindle to reduce your costs and step-up your quality production.

The Draper clutch spindle, used in conjunction with bobbins having the Stimpson Rib Bushing, will give you completely filled bobbins with uniform packages and properly placed feeler bunches. Investigate the Draper clutch spindle and see how you can cut your spinning and weaving costs.

DRAPER

ATLANTA, GA. HOPEDALE, MASS. SPARTANBURG, S. C.

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Fred'k Vietor & Achelis, Inc.
Established 1828

Schefer, Schramm & Vogel
Established 1838

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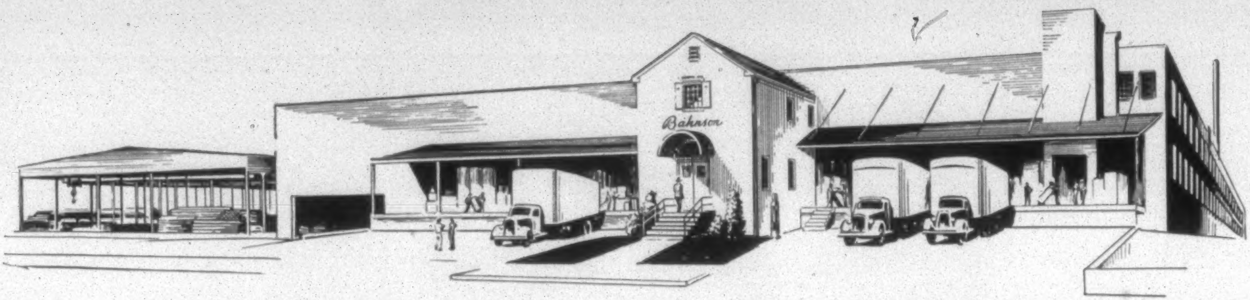
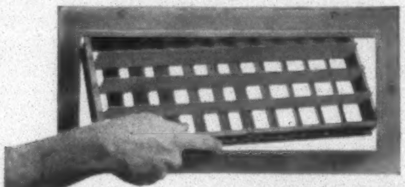
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

Bahnson AIR CONDITIONING

FOUNDED ON FACILITIES for PROGRESS



Modern—complete—and planned for advancement of air conditioning methods is the best way to describe the Bahnson plant.



The Bahnson Grille offers horizontal and vertical blade deflection and features a removable core to facilitate grille cleaning as well as to provide an access door to the distribution duct.

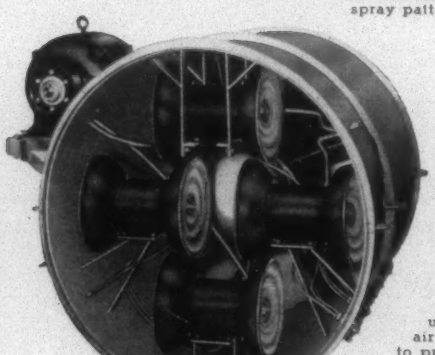
FACILITIES FOR RESEARCH

Full time research engineering is continually working with laboratory and testing equipment toward more efficient and economical methods.

The Bahnson Flexidur brass spray nozzle has a discharge orifice stamped from stainless steel to eliminate erosion at the opening, prevent accumulation of foreign matter, and assure uniformity of spray pattern.

FACILITIES FOR DEVELOPMENT

The proving ground of all Bahnson equipment is a department of research and development where full size models are "mocked-up" for trial and testing.



The Bahnson Centrispray Evaporator is available for either unit or central station air conditioning systems to provide high evaporative and air handling capacity and yet retain the economy of operation and installation that is basic in this Bahnson principal of atomization of water by centrifugal force.

FACILITIES FOR TECHNICAL PROGRESS

Long experience in air conditioning engineering coupled with our experience in the markets for air conditioning equipment inspires the continuous progress at Bahnson for matching all requirements with the latest and best equipment.

Bahnson Company
AIR CONDITIONING · HUMIDITY CONTROL
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

Rayon Reports

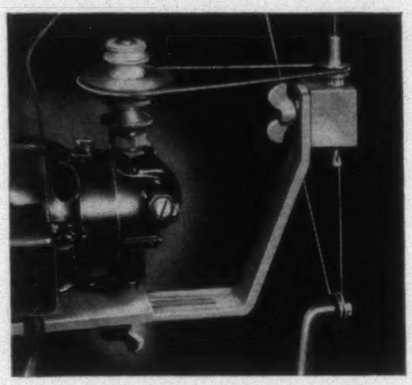
Prepared Monthly by American Viscose Corporation, New York, N. Y. December, 1950

Avisco Develops Method of Measuring Evenness of Low-Twist Filament Yarns

New "Rotafil"* device increases accuracy of results

A device for continuously measuring evenness of low-twist filament yarns has been developed by Avisco's Textile Research Department. Yarns with low twist or zero twist have long posed a difficult problem in evenness measurement, because these yarns have a tendency to flatten as they pass over guides. Their shape may vary from circular to flat or ribbon-like.

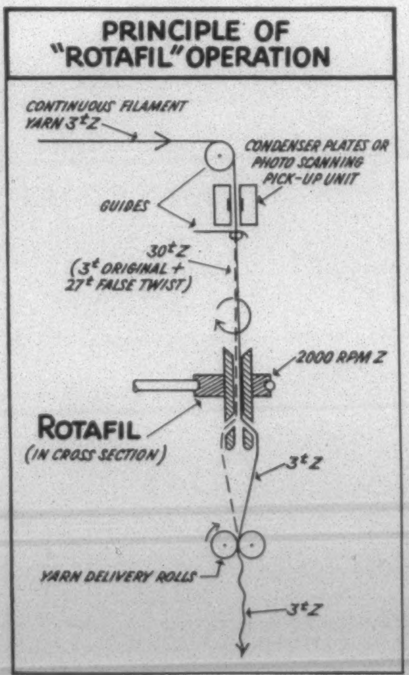
When running through conventional measuring devices, the flattened yarn presents alternating flats and edges to the light beam or electric pick-up element which falsely records this uneven silhouette as an irregularity in linear density.



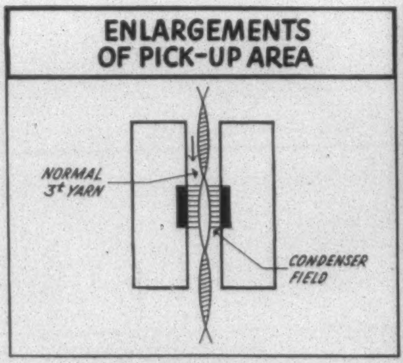
The new "Rotafil" unit overcomes this difficulty by twisting the yarn within the pickup element . . . measuring the twisted yarn and then removing the twist. A simple false-twisting tube with accurate guides is used to accomplish these results. This method eliminates the form factor by increasing the number of flats and edges in the pick-up area, by keeping their number constant and by rotating the yarn on its axis.

The development of "Rotafil" is an outgrowth of Avisco's constant efforts to encourage the production of better fabrics. It is being offered to the textile industry on a non-exclusive royalty-free basis . . . as a contribution to the maintenance of high quality standards. Complete information, photographs, drawings and other data are available on request. A demonstration of the machine can be arranged at the Textile Research Department in Marcus Hook, Pa., on appointment.

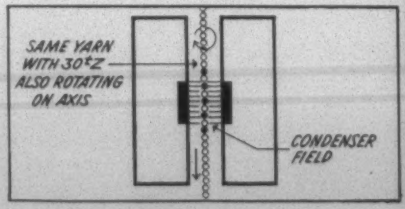
*Patent applied for.



PRINCIPLE OF "ROTAFIL" OPERATION
CONTINUOUS FILAMENT YARN 3^tZ
CONDENSER PLATES OR PHOTO SCANNING PICK-UP UNIT
GUIDES
30^tZ (3^t ORIGINAL + 27^t FALSE TWIST)
2000 RPM Z
ROTAFIL (IN CROSS SECTION)
3^tZ
YARN DELIVERY ROLLS
3^tZ



Shows how uneven form of 3 T yarns within condenser field will affect capitance because of form factor changes.



Shows how high twist and rotation on its axis presents uniform factor within field.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

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3. **FABRIC PRODUCTION**
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It is significant that this mill, like many others, included Foster Model 102 Winders in its new equipment. The Model 102 features, which undoubtedly influenced its decision, are as follows:—

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2. **INCREASED PRODUCTION** — Twice that of obsolete models. Winding speeds up to 700 y.p.m.
3. **ECONOMY** — Operating cost 1/3 less than that of obsolete models. Repair costs as low as $3.50 per year per 100 spindle machine.
4. **QUALITY PRODUCT** — Automatic inspection. Conditioned yarn, if desired. No ribbon wind. Minimum breakage on soft twist yarns.

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Reduce Costs!
Increase Production!
Improve Products!

BARBER-COLMAN AUTOMATIC SPOOLERS

The purpose of this machine is to do mechanically, as much as is practical, the work formerly done by hand in winding yarn from spinning bobbins to larger packages. Until the advent of the Barber-Colman improved system of spooling and warping, there was no substitute for the laborious work in this intermediate step. Now these machines are able to eliminate, almost entirely, the natural variations of the human element and, in addition, are able to provide the many other advantages listed here.

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★ HIGH PRODUCTION AT LESS COST
- REDUCTION IN FLOOR SPACE

★ REDUCTION IN HELP REQUIRED
★ LOWER SPOOLING AND WARPING COSTS
★ REDUCTION IN TIME REQUIRED TO CHANGE STYLE OF GOODS
★ EXTREME FLEXIBILITY IN HANDLING A WIDE VARIETY OF COUNTS
- LESS DAMAGE TO YARN IN HANDLING

★ INCREASE IN LOOM EFFICIENCY
- REDUCTION IN YARN IN PROCESS

★ REDUCTION IN SLASHER WASTE
- REDUCTION IN YARN TENSIONS
- REDUCTION IN WEAVING COSTS
- REDUCTION IN SPOOLER KINKS

★ "EVERY KNOT A WEAVER'S KNOT"

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NATIONAL N DYES

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AUTOMATIC SPOOLERS

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look at me
under ultra-violet

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1 Possesses exceptional scouring action.
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4 May be used in acid and alkaline solutions.
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6 Dissolves readily in water.
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8 Can be used on the most delicate fabrics and colors to good advantage.
9 Used to scour wool fabrics of open weave or soft spun yarns without any danger of felting.
10 Is an excellent dispersing agent for dyestuffs.
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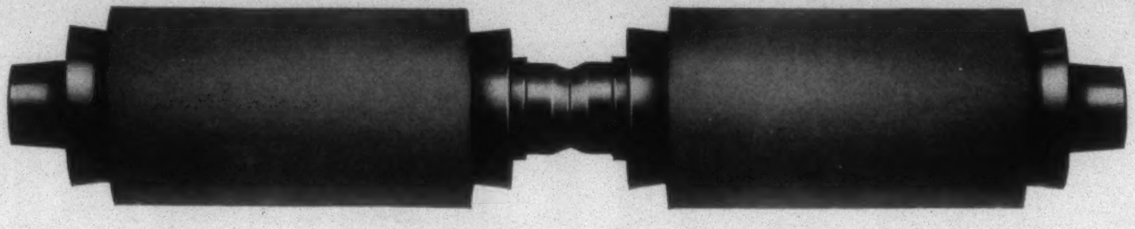
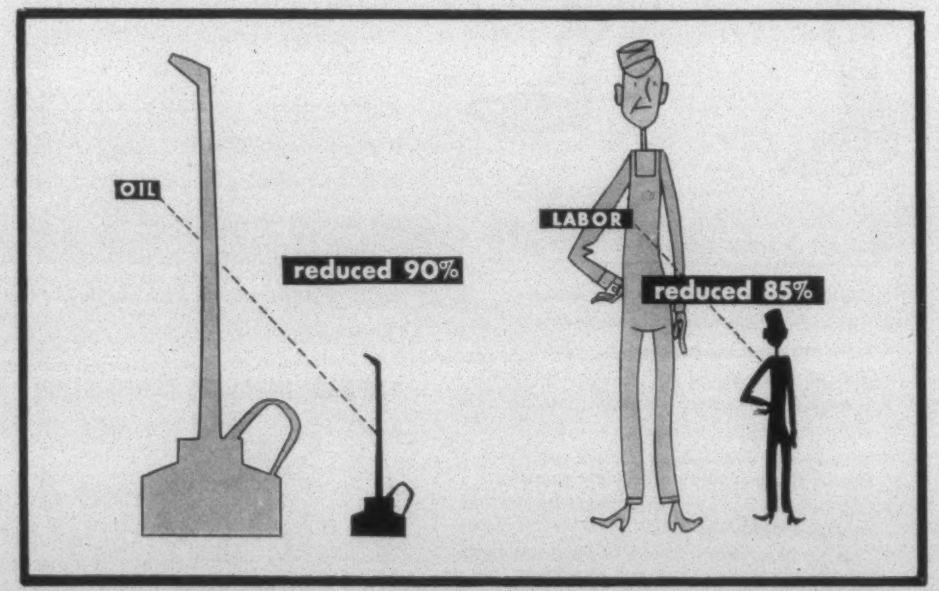


More than

450,000

have been installed.

Every mill should try out at least one frame of these S-L-T Top Rolls. We have a special plan which makes this possible on a very economical basis.



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Southern Plants: Atlanta, Ga. and Gastonia, N. C.

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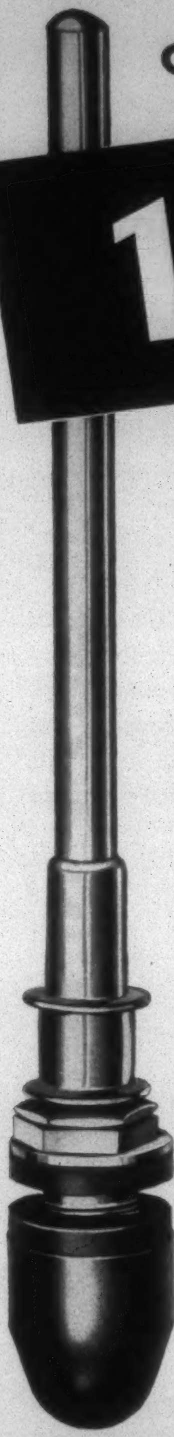

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NEW ERA SPINDLES

has given us concrete evidence that they are always successful in reducing costs.

Reports are coming back on the performance of over a million New Era Spindles. Those reports have considerable authority behind them!

They contain such convincing statements as these:

> *"No greasing or oiling has been done to these spindles since their installation over two years ago"*

> *"Yarn quality produced from spinning frames equipped with New Era Spindles is definitely improved. We attribute this to the more uniform speed"*

> *"Wear on spinning tapes is cut to a minimum, and we are replacing 60% less tapes on New Era Spindles than on the conventional type"*

> *"More labor saving, material saving and replacement saving"*

> *"The investment in these spindles and bobbins will pay its way out in about four years. These spindles have to date been no maintenance problem whatever"*

> *"It was found that our spinning frames could be operated with a 7½ HP motor instead of the 10 HP motor required with the old type spindle"*

A trial installation of New Era Spindles in your mill will quickly demonstrate how you can save power, reduce maintenance, and improve quality. On request, our engineers will make a forecast of savings that are possible with New Era Spindles.

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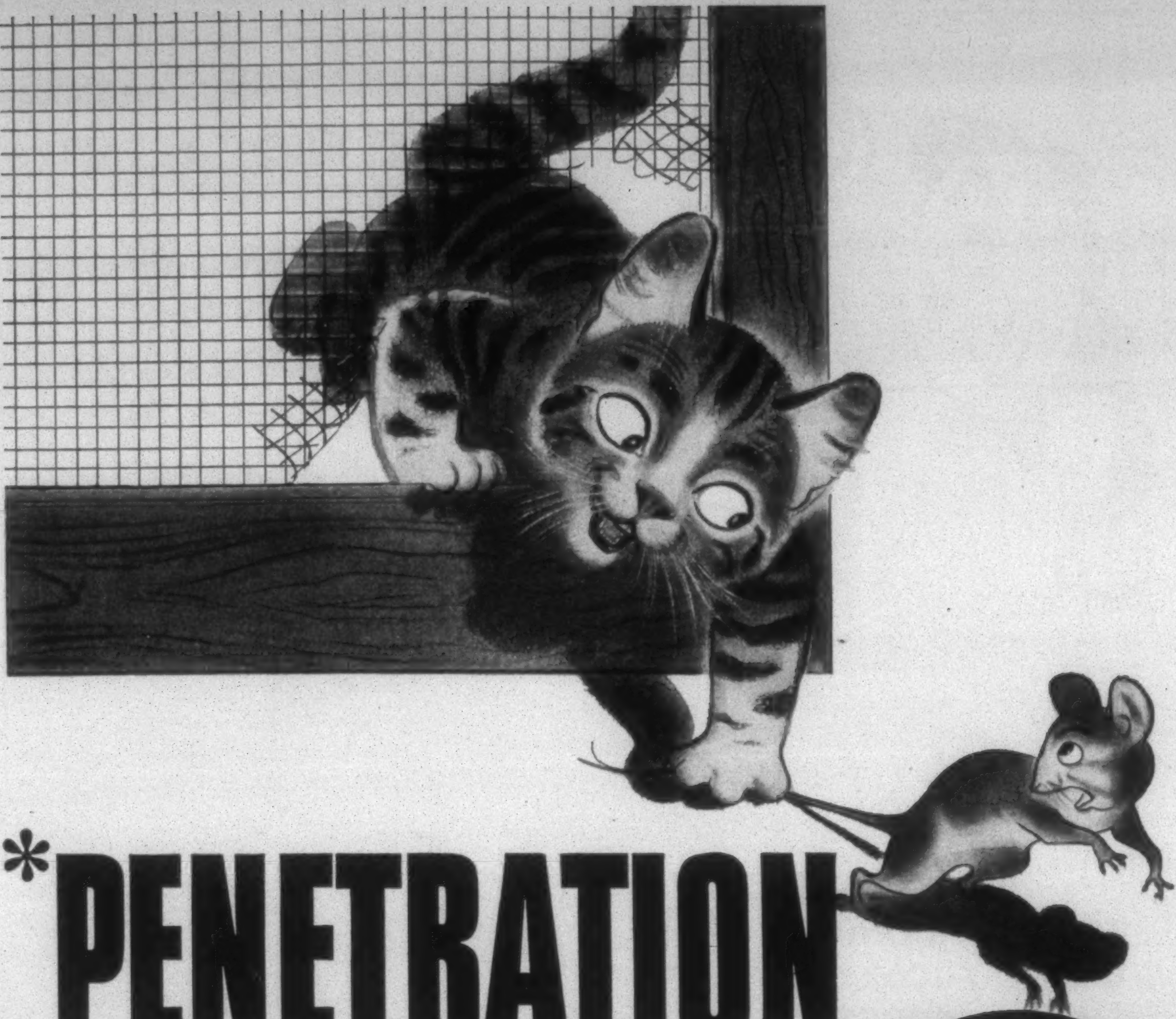

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Made to "absorb punishment" without thinning down and dripping, Tycol greases avoid wasted lubricant, lost bearings and unnecessary down-time. These ultra-safe lubricants keep bearings . . . gears . . . shafts . . . friction-free and cool. They are available in grades with the proper "*PENETRATION" needed to give power a chance to produce with a minimum of waste.

Call your nearest Tide Water Associated office. Let them suggest the Tycol grease best suited to your needs . . . and remember, Tycol green cast greases are made from high quality cylinder stock and well refined neutral oil, with a minimum of soap — a maximum of oil . . . more efficient lubrication per pound of grease.

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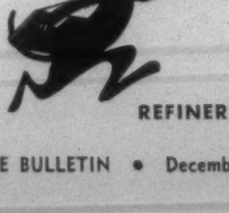

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This informative handbook, "Tide Water Associated Lubricania," gives clear, concise descriptions of the basic tests used to determine important properties of oils and greases. For your free copy, write to Tide Water Associated Oil Company, 17 Battery Place, New York 4, N. Y.

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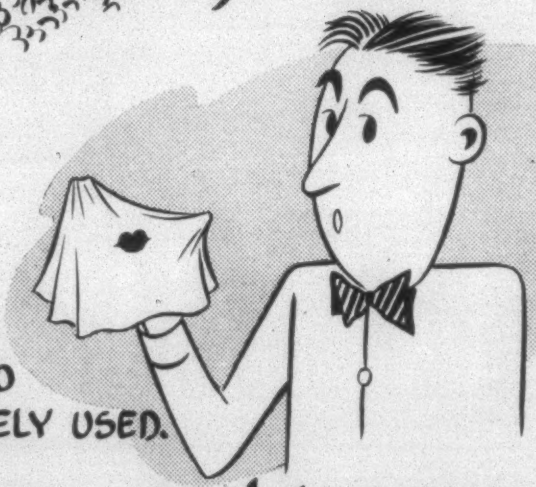

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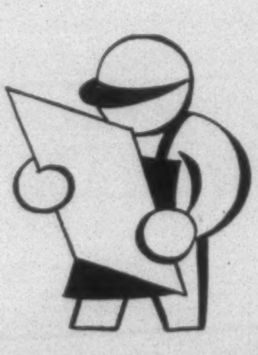

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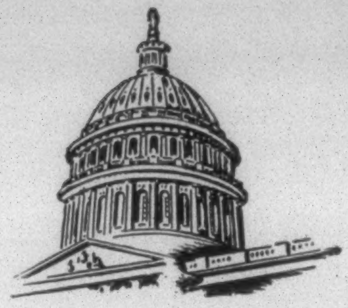

WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

Disaster in Korea struck Congress and all of Washington with sickening force. Vaunted American defense and atom bomb security suddenly became a myth. Truman and aides sat in a seemingly paralyzed daze as the magnitude of the greatest military disaster in national history unfolded. No one knew where or how the next blow would fall; the absence of intelligence was appalling. National sovereignty and security in hands of putty had become so enmeshed and compromised in the intrigues and machinations of Socialist, Communist and pan-handling nations that thoughtful men were doubtful if independence and freedom can be recaptured and restored within the life-spans of most Americans now living.

If Mr. Truman realized the depth and scope of the disaster, he carefully kept it to himself. No word of hope, of encouragement, of facing the blow with courage, came from him. Instead, he did what he has done before in each fresh crisis—ran to Congress asking for more billions of dollars for defense needs. Members of Congress, in turn, asked what in the name of high heaven has been done with the tens and scores of billions of dollars that have been given to the Truman regime since the war's end for this purpose.

Everyone realized the U. S. is fighting almost wholly alone in Korea, although it's called a U. N. war effort. With Russia palpably behind all of it, not one word of formal condemnation of the Kremlin was voiced in the U. N. Vishinsky and Malik used the U. N. to hurl a constant stream of epithets and insults at the U. S., nor was there condemnation of Chinese Reds as they invaded Korea; their spokesmen were invited over to join in the tirade of abuse of the U. S. Other nations seemed fearful the debacle would interfere with the free flow of aid dollars from the U. S.

Cold fact is that the disaster found the Truman regime with no over-all policy for military guidance or for rearming. Billions poured out by Congress for this purpose over five years had seemingly been squandered in salaries of swollen government personnel, adhering to wishful thinking, making no decisions, and fighting over pet programs of various branches of service.

The Pentagon crowd has complaisantly held that the Kremlin won't be ready to fight for another two or three years, and "there's still plenty of time." Truman has gone along with this theory. But operations in China indicate Russia is probably ready to fight now, and testing out its weapons on U. S. forces.

Condition of national defense and military readiness presents probably the most appalling debacle in national history. Proposed economic controls are in chaotic condition, with C.I.O. demanding a determinative role in controls and policy-making, with its men in key jobs, and citing past "political service." C.I.O. is angrily complaining of Truman's failure to give unionists what they want. Truth is no one knows how many Communist spies, Kremlin agents and other Reds are still hidden and active under the C.I.O. blanket.

Credit control is still the government's chief weapon in combating inflation. Security Chief Symington intimates price and wage controls may be imposed April 1. He says restrictions on credit should be given more chance; also, the Defense Department should say what it wants before the economy is plunged into a straight-jacket.

Resistance to an excess profits tax simply evaporated in the House in the face of the Korean crisis. The bill in some form will pass the Senate. But very soon Mr. Truman is expected to demand of Congress the heaviest personal and corporate taxes in the country's history.

The excess profits tax plan put forward by Treasury Secretary Snyder was a product of Keyserling and Blough of the Economic Advisory Council. The Treasury's own tax experts had small sympathy for it.

Major question now is how, in the absence of wage controls, to prevent a new round of wage increases from setting off another inflation spiral. If it comes, say the experts, the government will be more powerless to do anything about it because nothing has been done before, and nothing can be done about price controls unless there are wage controls, too.

The Wage Stabilization Board, of which Cyrus Ching has been made chairman, is simply marking time. Its only assignment is to make recommendations to the Economic Stabilization Board. But the latter has no program for either price or wage controls, and it's stalemated in the fact unions are refusing to give a no-strike pledge.

Truman is holding back from applying any pressure on the union bosses either for a non-strike pledge or to forego more wage demands which soak up more of the defense dollars. Continuing wage increases are adding heavily to rearmament costs; 16 cents an hour or more to steel workers will add about $10 a ton to the costs of steel for rearmament.

Truman had the proposed statehood law for Alaska and Hawaii withdrawn when Southerners made clear they would fight to the limit against action on it. The bill would probably have given Truman four more senatorial adherents, and opened the way for trying to bring up F.E.P.C. again.

Letters pouring in on senators and House members from constituents are almost unanimous in demanding use of the atomic bomb in repelling Chinese invaders in Korea. Most of the letters express dismay at the more than 31.000 casualties among American troops, and demand that Chiang's 500,000 troops on Formosa be brought in.

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During 1950 Bahan made and delivered more loom parts to more mills than ever before in our 32 years of service to America's textile industry.

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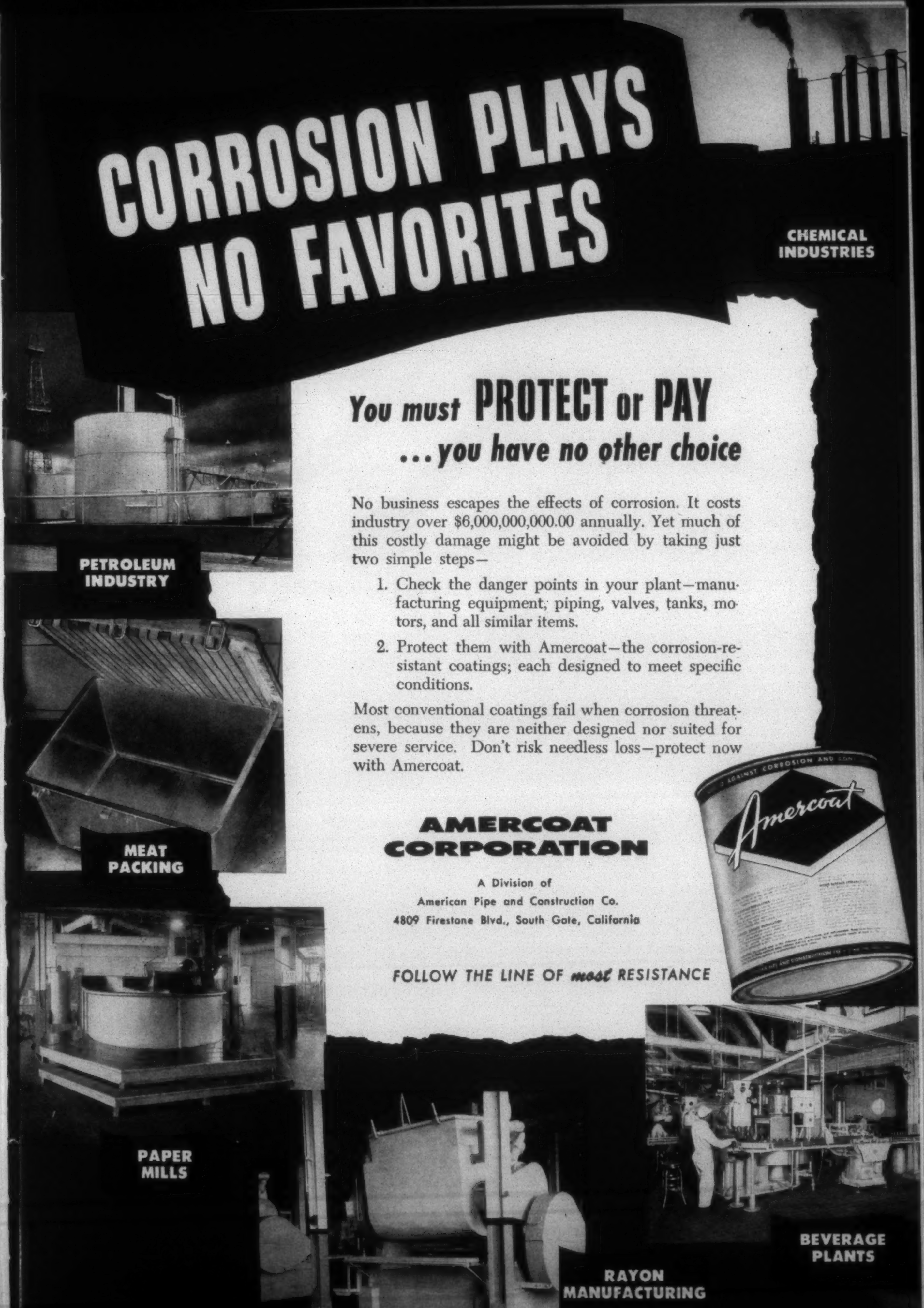

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All three were displayed and demonstrated at the American Textile Machinery Exhibition in Atlantic City. Viewed by thousands of trade representatives, the H & B exhibit proved to be a highlight of the show.

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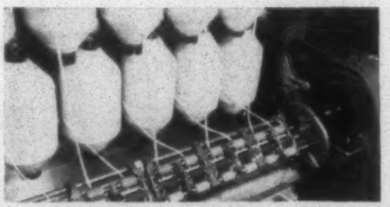
. . . four of the largest and best known mills in the country invested millions of dollars in new spinning equipment designed and built by H & B. For the Springs Cotton Mills and the Erwin Mills emphasis was placed on the H & B Casablancas Hi-Draft System, while installations at J. P. Stevens & Co., and the Woodside Mills are divided between Hi-Draft and the Casablancas S-3 System for synthetic fibers.

In addition, H & B has installed a large number of sample frames, as well as changeovers to these new systems, in other mills throughout the country.

And Now . . .

. . . looking back over the record, it is possible to say that the mill performance of the H & B Casablancas Systems for high drafting has proved that they are the most outstanding spinning systems on the market today.

For high drafts and high quality yarns — look to H & B. Complete details are available on request.



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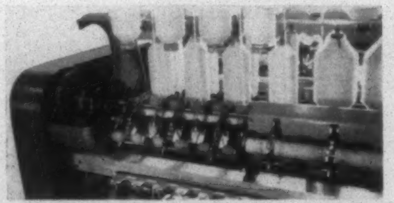

H & B CASABLANCAS S-3 SYSTEM
For synthetics and blends on any fiber from 1″ to 4″. Three-roll system with double apron between first two lines. Features spring weighting, new type saddle and a cradle design with interchangeable platforms. Changeover from spinning one staple length to another made in a few minutes, without changing cradles, belts or roll settings. Drafting range 14″-40″ with complete fiber control.

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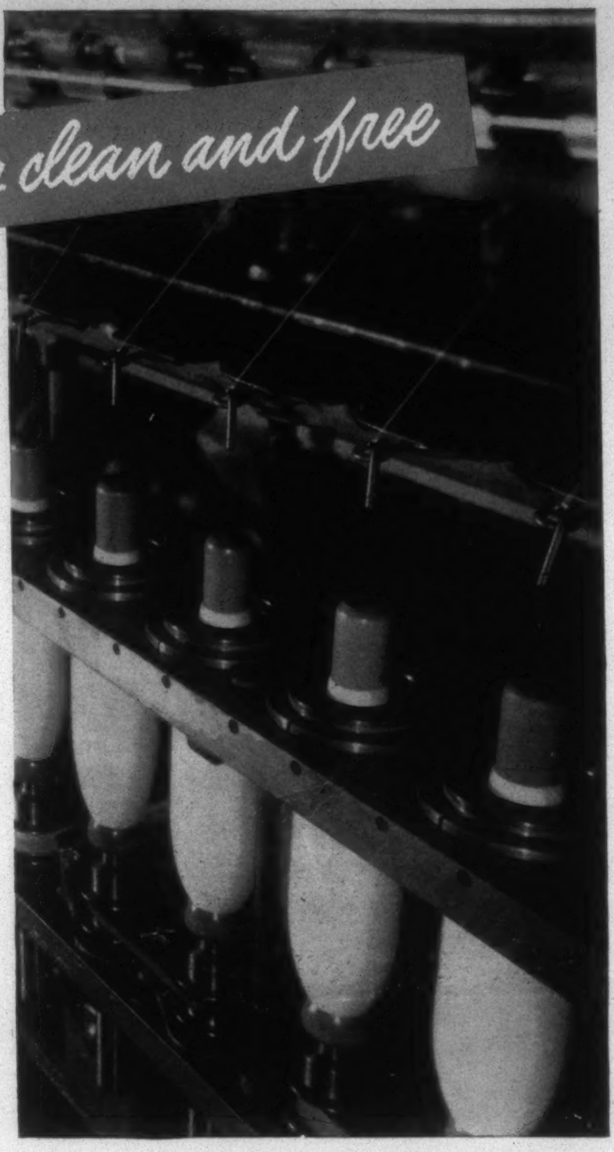

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an outstanding new oil that reduces friction, wear, and cleaning costs

Gulfspin keeps spindles remarkably clean—much cleaner than ordinary spindle oils. Here's why: Gulfspin is not only highly resistant to the formation of sludge but also has the remarkable ability to prevent sludge from depositing on blades and bolsters. Result: reduced cleaning costs and end breakage.

Gulfspin has excellent load carrying characteristics which insure against excessive wear in cast iron bolsters. This means freedom from spindle wobble and lower maintenance expense.

This quality oil helps reduce starting torque in spindles, and it does not increase in viscosity even after long service. Thus power consumption is kept at much lower levels than are possible with ordinary spindle oils. And it helps protect spindle parts against rust.

Users of Gulfspin report a complete absence of sludge deposits and absolutely no increase in power consumption after months of service. See for yourself on your frames — that this new spindle oil is better in every way. Write, wire, or phone your nearest Gulf office and ask a Gulf Lubrication Engineer to call.

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Penalties For Freedom

EVERYBODY except the few half-baked professional intellectuals who have swallowed the twaddle of Marxists or Socialists or any other kind of "ists" accept the fact that the American Free Enterprise system is the best economic system in the world. All of us who have worked and lived "Free Enterprise" know its abilities.

Now, this country's textile industry and all those allied with it face the threat of penalty for standing on their own feet—for being able to operate the Free Enterprise way.

Elements in our government seek to lower tariff barriers and let competitive textile foreign products flood our country. If tariff barriers are lowered, American textile industries will be driven to the wall. We will be forced to fight an unfair fight because these foreign manufacturers are subsidized—directly—by their governments.

In our own particular branch of textiles, we are slowly being forced out of South American markets and Mexican markets and Canadian markets by subsidized competitors. They can undersell us every time not only because their raw materials cost less, or because their labor costs less, but because, added to all of these, they receive direct payment from their governments. This suggestion to lower tariffs on textile chemicals, if followed, would give them the "go" signal to take away our domestic markets as well.

The results are easy to imagine. Men would be forced out of work. Financial ruin would be possible for many of us. The over-all economy of the United States would be undermined. *This would be the harvest we would reap for inventiveness, ingenuity, investment of savings and profits.*

Free enterprise has enabled us to buy more for every hour's work we put in than any other country in the world. We have more skilled workers. We have more new tools, new plants, new and better machines. We have higher wages, lower prices, shorter hours.

We in the chemical industry have helped contribute to our standard of living by research, by mechanical ingenuity, by constantly striving to become more and more efficient. We are proud to say that we can *more* than match the challenge offered by competitors of any other country—if these competitors operate under the system of free enterprise. We cannot do it if they are subsidized by their governments.

We do not ask for increased tariffs. We do not ask—rather, we abhor the thought of—government subsidies. We ask only that the tariffs now in effect be kept at the same rates that have been effective for the past 20 years. To lower them now is to penalize the textile industry for its successes under the economic system of Free Enterprise. —*Albert J. Royce* in *Royce* (Chemical Co.) *Reporter.*

Take It From A Nickel

RIGHT now we've got an old, familiar question edging up to poke us in the ribs and try again for a different answer. It's the same, antique item that has been nagging at us straight through history, from Plymouth Rock right up to today's headlines. To date, no amount of slapping down has eliminated this issue, and even the latest mauling failed to finish it off.

The question, as always, is blunt and to the point: Are we hanging on to all our freedoms? Notice that all of them are included. Not this particular one nor that, but the whole works. Certainly the question is right out in the clear and honest, for just let one of those freedoms start to slip and right away all of them are skidding.

Once more we have to give the same old answer, but this time louder than ever before. That kind of treatment is an old national custom, taken straight out of the Declaration of Independence which set it forth with the statement that "men were endowed by their Creator with certain inalienable rights." And so that everybody could get the habit fast, the idea was repeated on the first money issued and still stands on the nickel and other coins: "In God We Trust."

That trust helped carry the founding nation through its blackest days when there was little more than faith to hold the country together. It can carry us today through every danger of a sick and demented world. It is our mightiest arsenal of spiritual power.

The greatest source of our spiritual strength lies in religion and our religious institutions. For there, in the churches and synagogues, we can learn as children the basic rules of right and wrong—the conscience that is the foundation of character. And there our children are being trained now in the same lessons in character.—*The Spindle,* Standard - Coosa - Thatcher Co., Chattanooga, Tenn.

Wool Prices (I)

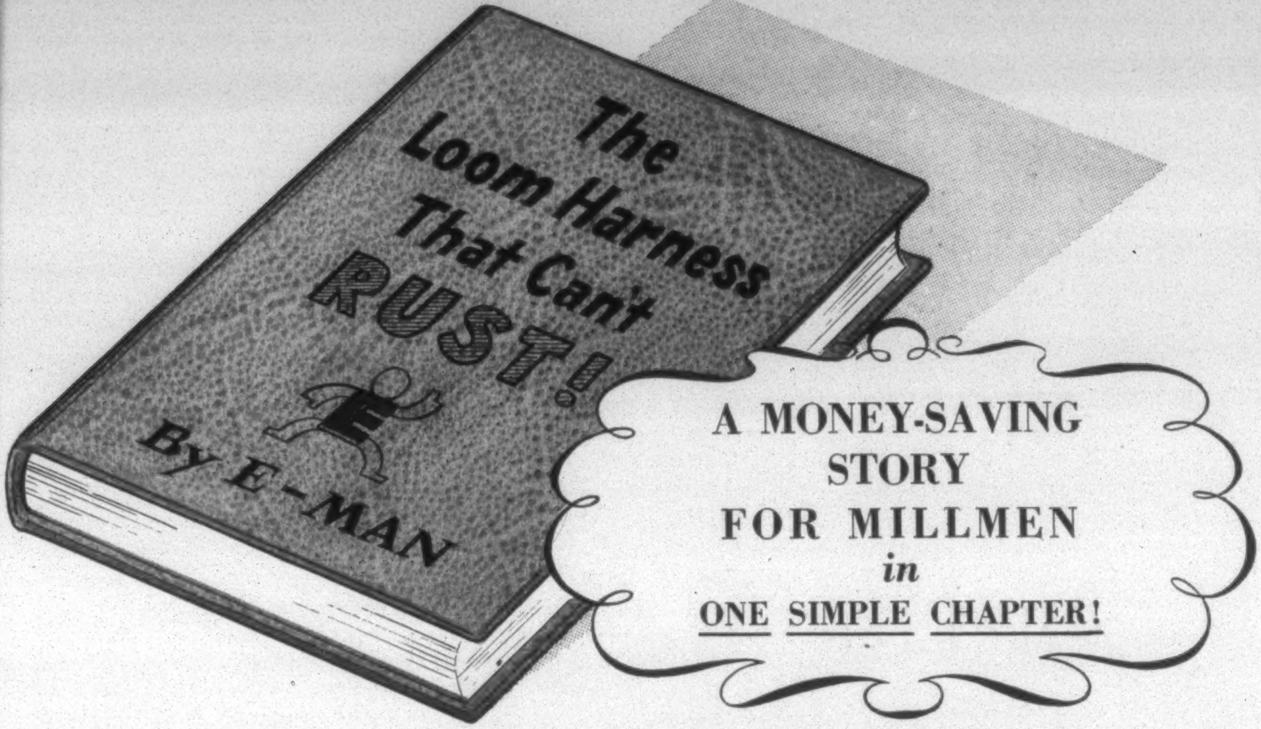
PURE wool is pricing itself out of my family's closets and home. First result: after years of blind obedience to quality-durability traditions, we're determined to go in for the mixture and synthetics in suits, in coats, in socks, in sweaters, in rugs. And there are countless families like us who either are making this same decision today or who will make it tomorrow. Second result: America is about to see a separate boom in the synthetics that can be used as replacements for wool or that can at least be less expensive additions to the finished product. And this development will make the over-all price tags on many clothing and household essentials more tolerable.

Pure cotton is also showing a disturbing inclination to price itself out of my everyday life. First result: I'm really seeking acceptable substitutes, really looking forward to buying new, oddly-named fabrics in the hope they'll equal and perhaps surpass the original.

And there are hundreds of thousands of families in income brackets below and above mine who will come to the same spot as our land moves further and further onto a semi-war basis.

It's happening again. War and inflation impel research into untried fields; shortages create their own substitutes; necessity impels progress toward greater efficiency and self-sufficiency. We saw it during and after World War I; we saw it during and after World War II; it is being repeated once more.

There is a price-point at which we resist the purchase—and we resist not because we have been asked or warned to, but because as individuals making an individual decision, we simply can-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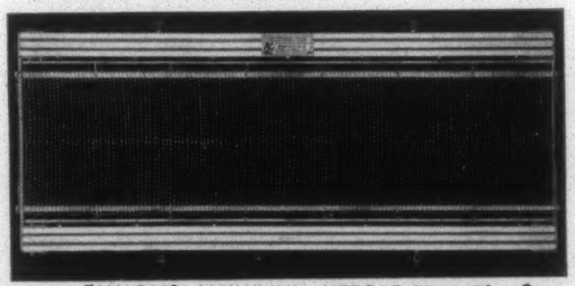
For as long as there have been weave rooms RUST has taken a costly toll in cloth seconds, extra finishing headaches and weaving slow-downs. Now all that expense is in the past. Emmons has developed a complete harness that lives in heat and moisture like a duck lives in water . . . naturally. Mills using the Emmons Rust-Proof Harness report important savings in loom operation . . . these savings *should* be yours and *can* be yours with the Emmons Rust-Proof Harness!

Here are "plus" advantages in the new Emmons Rust-Proof Harness—Extra Frame Rigidity With Reduced Distortion, Free Sliding Heddles and Greatly Reduced Heddle and Yarn Breakage—Heddles With A Low Coefficient of Friction To Aid in Weaving—Easy Heddle and Reed Cleaning—Less Reed Dent Breakage—MUCH LONGER LIFE FOR THE ENTIRE HARNESS!



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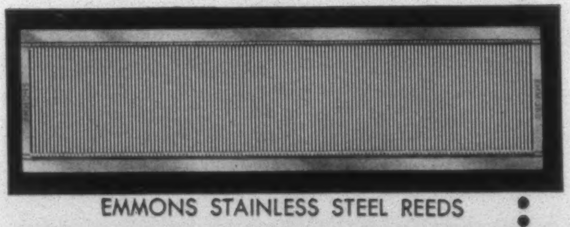

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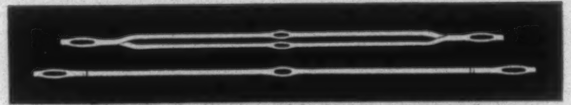

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not tolerate the tariff. For instance, a few months ago, I bought a small amount of pure wool carpeting on a sale. It's a most reputable store and since the line was being discontinued, the remaining stock was being offered way down, at $7.95 a yard. Beautiful stuff. Last week-end, I went back to the store to see if I could pick up just a little more. The sale was over, of course. The price tag on similar-quality carpeting was $12.95 and that was the cheapest available. When I whistled in dismay, the salesman volunteered, "I don't blame you. I'm actually ashamed to quote prices."

So we talked about wool — about how it had skyrocketed since Korea and how nations the world over were bidding for short supplies and how carpet prices have jumped 30 to 40 per cent above pre-Korean prices and what I, an individual, was going to do. Then he said: "We stocked synthetics in the war but they were awful. Now, though, we're assured the new wool-rayon mixtures are excellent and better than all-wool in some ways. And lots cheaper."

"Are you going to stock them again?" I asked. "Yes, we'll have a supply in soon for the spring season. All the big companies are going in for synthetics now—Bigelow-Sanford, Alexander Smith, Mohawk. We'll even try some all-rayon carpets to see how they go over. You'll be able to get a choice."

The Carpet Institute confirms this in exuberant terms. In fact, the institute resents the word "substitute;" it insists the mixtures will be "improvements." Thus, it will be with other materials. American ingenuity and ambition will help the companies find a way out. And our need and choice will help us find a way out. I'm all set to go along.—*Sylvia F. Porter* in *Newark* (N. J.) *Star-Ledger.*

Wool Prices (II)

PRESENT prices for wool reflect primarily the basic relationship between world wool supplies and civilian demand. It is true that the possibility of greatly increased military requirements from all the countries in the world has stimulated upward price tendencies. Even this tremendous inflationary influence, however, has not caused wool to advance in as great ratio as have many other primary commodities essential to our peacetime civilization and necessary in any program of national defense.

Increased human appreciation for wool, particularly in those countries which have been deprived of wool during the war and post-war periods, is increasing the world's per capita wool consumption. In addition to increased per capita consumption, there is a world-wide increase in population. Our total population has greatly increased its average earnings since 1939. Per capita buying power of the average individual in this country has increased by 44 per cent in terms of the buying power of the 1939 dollar.

The world has been using apparel wool during the post-war period at an average rate 15 per cent greater than wool production. The difference between world production and world consumption has been from government stockpiles of wool which are nearing their end. We are, however, entering 1951 with world supplies of apparel wool in trade inventories or coming off sheep, almost two billion pounds greater than the amount of wool ever consumed throughout the world in any one year, including our peak war periods of consumption.

As a result of increasing prices not only for wool but for all other fibers and for all the ingredients and the labor which go into the production of finished apparel and other wool products for a wide variety of household uses, the market has been filled with discussions and prophecies as to the future of blends of wool and other fibers. There is an insistent pressure on the part of all producers of wool products and retail merchants to hold, if possible, traditionally established wholesale and retail price lines by reduction of quality of product—because that is the only possible way in which this result can be accomplished. The validity of this reasoning should be examined in the light of present price levels which are the direct reflection of what is termed generally "inflation."

First and foremost, it should be understood that The Wool Bureau does not condemn any fiber, fabric, or any blend of fibers in a fabric. All have their legitimate uses and markets. It merely states categorically a proven fact. This is that a pure wool fabric is always superior in wear, service, wrinkle resistance, color values, and integrity of fashion to any similar fabics containing blends of wool and other fibers. If this were not true, wool could not continue to remain the premier fiber for human use in the face of the insistent promotion of synthetic fibers during the last 20 years.

Wool prices are governed primarily by civilian supply and demand. If the demand of the public for wool should weaken, prices for wool would recede in almost exact ratio with reduced demand. In other words, when the public resists the prices it is necessary to charge today for all-wool apparel, all wool apparel will sell for lower prices.

In assessing the intrinsic values of any fabric in which wool has been diluted with other fibers, one salient fact must be borne in mind. All of the economies effected in such a fabric are restricted entirely to the fiber content. All other costs of producing this fabric are as great, or greater, than producing a 100 per cent wool fabric. The term "greater cost" is used because when animal and synthetic fibers are blended together the process of manufacturing the fabric must be modified step by step to make up for their differences in spinning qualities, weaving efficiency, facility for fulling and felting, and the reaction of blended fibers to the dyeing processes. — *F. Eugene Ackerman,* President, the Wool Bureau, Inc., before National Wool Growers convention.

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Internal Security

THE internal security of the United States can be assured with the co-operation, aid and assistance of every law-abiding person in our nation. The President of the United States in restating the responsibilities of the Federal Bureau of Investigation has called upon all law-abiding enforcement officers, patriotic organizations, and individuals to report information pertaining to espionage, sabotage, and subversive activities to the F.B.I. Plans have been made and are in operation whereby the law enforcement agencies of the nation are working in close co-operation with the F.B.I.

The following suggestions are being made to assist patriotic organizations and individuals in complying with the President's request:

(1) The F.B.I. is as near to you as your telephone. The first page of every telephone book in the country lists the nearest office of the F.B.I. You can communicate with the F.B.I. by telephone, letter or call at our nearest office.

(2) Feel free to furnish all facts in your possession. Many times a small bit of information might furnish the data we are seeking. If you have any information on sabotage, espionage, or subversive activities, contact the F.B.I.

(3) The F.B.I. is interested in receiving facts; we are not interested in what a person thinks but in what he does which undermines our internal security. Avoid reporting malicious gossip or idle rumors.

(4) Do not circulate rumors about subversive activities, or draw conclusions from information you furnish the F.B.I. The data you possess might be incomplete or only partially accurate. By drawing conclusions based on insufficient evidence grave injustices might result to innocent persons.

(5) Once you have reported your information to the F.B.I. do not endeavor to make private investigations. This can best be done by trained investigators who have access to data acquired over the years on individuals engaged in subversive activities. Hysteria, witch-hunts, and vigilantes weaken internal security. Investigations involving internal security require care and painstaking effort. We all can contribute to our internal security by protecting the innocent as well as by identifying the enemies within our midst. In cases involving espionage it is more important to identify spies, their contacts, sources of information, and methods of communications than to make immediate arrests.

(6) Be alert. The greatest defenders against sabotage are the local American workmen who are producing the materials and weapons for our defense. They can be the "watch dogs" of defense in every walk of life.

(7) The forces which are most anxious to weaken our internal security are not always easy to identify. Communists have been trained in deceit and secretly work toward the day when they hope to replace our American way of life with a Communist dictatorship. They utilize cleverly camouflaged movements, such as some peace groups and civil rights organizations, to achieve their sinister purposes. While they as individuals are difficult to identify, the Communist Party line is clear. Its first concern is the advancement of Soviet Russia and the godless Communist cause. It is important to learn to know the enemies of the American way of life.—*J. Edgar Hoover,* Director, Federal Bureau of Investigation.

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Dripping, leaking oil lowers loom production. It won't stay in bearings, so gets on warps and goods, causing oil spot "seconds."

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Don't you believe it! If anyone approaches you with products they claim to be exact imitations of NON-FLUID OIL at a lower price, don't you believe it! The basic factors in all industrial production preclude paying a little and getting a lot. . . Remember, you only get what you pay for!

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

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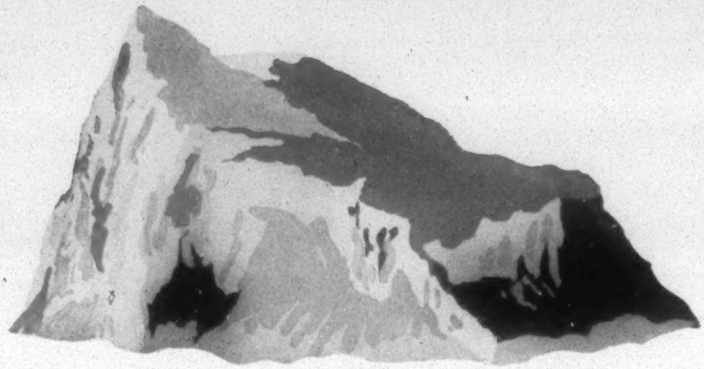


A FOUNDATION SOLID AS GIBRALTAR

TO the seasoned veterans of the Textile Industry, STE-HED-CO Products need no introduction. These products have long played a leading part in the scientific advance and development of weaving—they have been associated with every modern weaving accomplishment for the past half century.

To the younger generation, the new faces in the industry, the Quality of STE-HED-CO and SOUTHERN Products will be a revelation. This QUALITY immediately reflects itself in product performance . . . and PRODUCT PERFORMANCE explains the enviable world-wide reputation STE-HED-CO and SOUTHERN Products enjoy.

STEEL HEDDLE leadership has been constant over the years. It began in 1898, when in a small plant on the outskirts of Philadelphia, Pa., the company foundling fathers pledged themselves to obtain through research and experience, the knowledge to manufacture ONLY products of superior quality to assure more efficient production at a more economical cost. A tradition adhered to during STE-HED-CO and SOUTHERN'S entire business history.

From its modest beginning, when the now famous "FLAT STEEL HEDDLE" was first introduced to replace the then universally popular Cotton Harness and Round Wire Heddle, the company has pioneered in every stage of weaving and has consistently inaugurated new and better methods for handling yarn in its process before weaving.

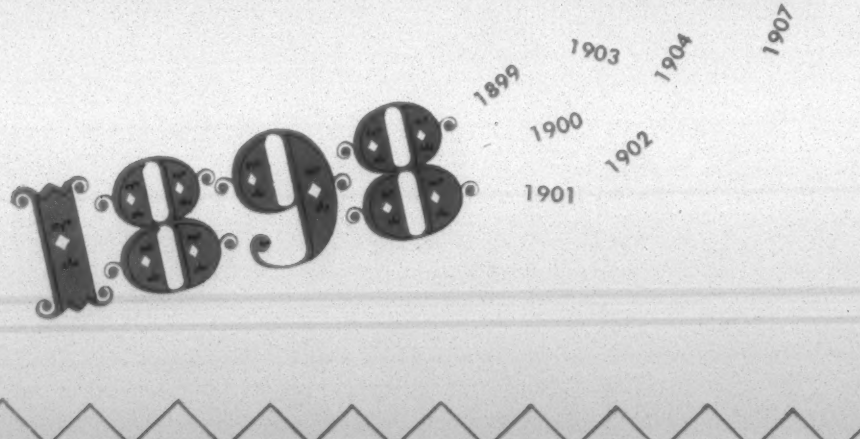
SOUTHERN SHUTTLES, organized in 1931 to round out a complete line of TEXTILE ACCESSORIES, is a Division of the Steel Heddle Mfg. Co. This Division, housed in its own air-conditioned plant, is designed, constructed, specially equipped and fully staffed to exclusively produce the world's finest and most durable Shuttles. And . . . Southern Shuttles has sponsored and pioneered all major shuttle improvements.

STE-HED-CO and *SOUTHERN SERVICE* has always been first. A competent engineering staff supplemented with practical mill men do *all* the mill contact work. These trained experts are conversant with mill problems. They appreciate new applications and understand what successful product performance means.

Today, possessing over 200 U.S. Patent grants, and with five large plants in the U.S.A. and Canada, the company is justly proud of its many contributions to the industry.

Space won't permit listing them all, but hereunder are just a few STE-HED-CO and SOUTHERN achievements . . . Their contributions to Textiles.

SLIDE HOOK FRAMES • DOUBLE BAR FRAMES • ALUMINUM FRAMES • FLAT STEEL DOUP HEDDLES • DUPLEX HEDDLES
TEMPERED STEEL HEDDLES FOR WIRE WEAVING • STAINLESS STEEL HEDDLES FOR WEAVING ARTIFICIAL YARNS
DRAWTEX HEDDLES & FRAMES SUITABLE FOR BARBER-COLMAN DRAWING-IN MACHINES • A VARIETY OF NEW WEAVING & WARPING REEDS
APPLIANCES FOR WARPING & SLASHING • A NEW AND SPECIAL TYPE OF HARD CHROME PLATING • TEMPERED DOGWOOD SHUTTLES
PATENTED SHUTTLE EYES FOR EVERY FABRIC • HIGH SPEED SHUTTLE SPRINGS • MAGNUM TIP CONSTRUCTION • STEHIDE & DUROWELD SHUTTLES



STEEL HEDDLE MFG. CO.

2100 W. ALLEGHENY AVE. • PHILADELPHIA 32, PA.

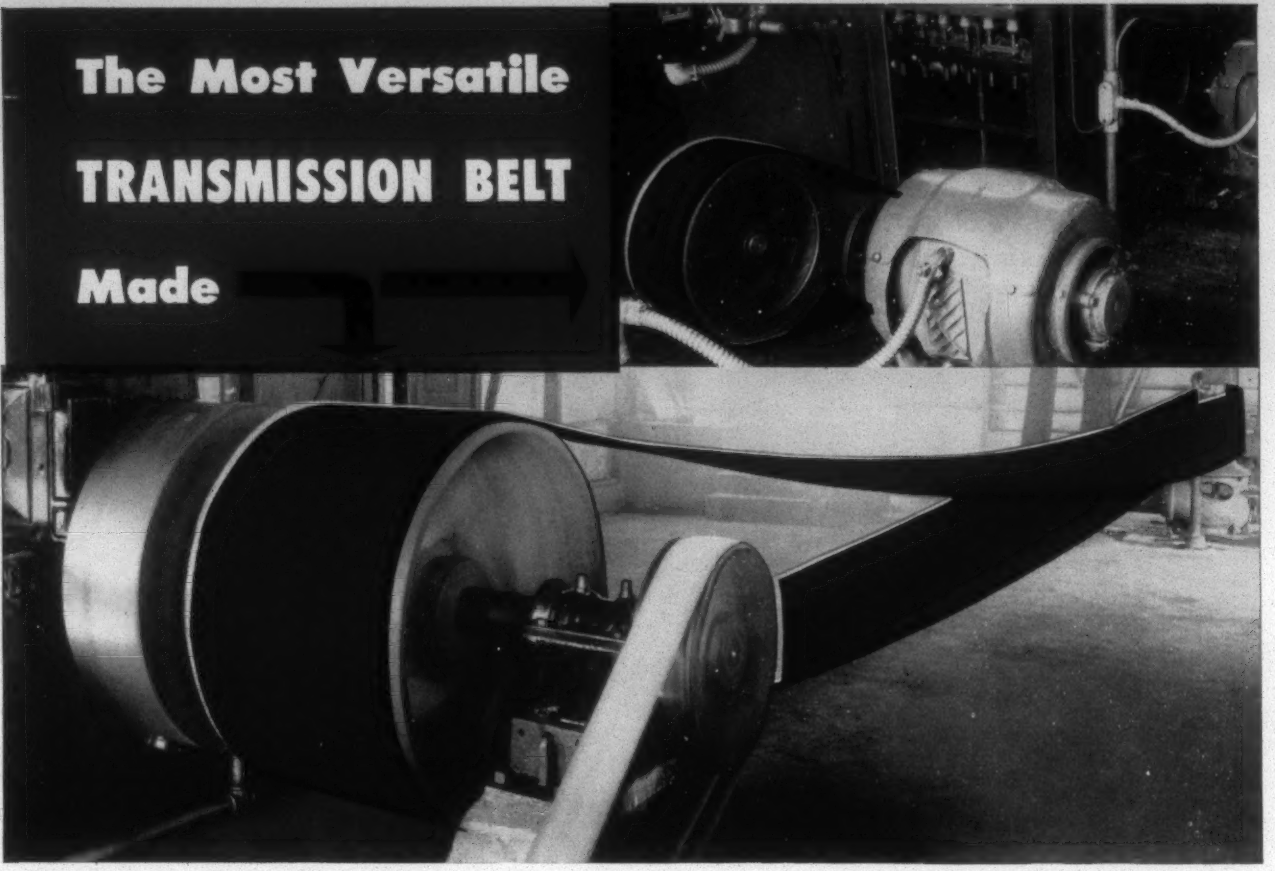
Other Plants and Branch Offices: Greenville, S. C. • Atlanta, Ga. • Greensboro, N. C. • Providence, R. I.

SOUTHERN SHUTTLES . . . Paris Plant . . . Greenville, S. C. A Division of STEEL HEDDLE MFG. CO.

STEEL HEDDLE COMPANY of CANADA, LIMITED 6259 Notre Dame Street East • Montreal, Can.

1-K-8

The Most Versatile TRANSMISSION BELT Made



Condor Whipcord Endless Belts are Used Everywhere

. . . for long or short centers, high or low speeds, large or small pulleys, wherever endless belts can be installed. Whether light, fast drives on textile machines, or heavy duty drives on pumps or Jordans, Condor Whipcord Endless Belts save money over any other type of belt.

The foremost feature of a Condor Whipcord Endless Belt is low inelastic stretch. Manhattan engineers were the first to *pre-stretch* cords during manufacture to insure a belt that maintains its tension on the drive without constant take-up. The stout Whipcords are so impregnated with Flexlastics and protected in the body of the belt that no atmospheric conditions affect the length of the belt.

Other advantages of the Condor Whipcord Endless Belt are its outstanding flexibility, its freedom from ply separation, and no splice in the tension or load carrying section. These advantages make it the ideal belt for serpentine drives as on wood working machines.

EXTENSIBLE TIP AIDS LONG LIFE

Still another major belt value is Manhattan's patented Extensible-Tip method of splicing the cover ends. The results it gives you in longer wear are easily demonstrated. Figure A photographs the usual failure of a regular cover end splice. Figure B shows an Extensible-Tip cover end splice still intact after running 10 times as long under identical conditions. If belting is costing money in your plant, by all means have your Manhattan distributor or a Manhattan engineer show you the Patented Extensible-Tip and demonstrate the features of Condor Whipcord Endless Belts.

Keep ahead with Manhattan

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Manufacturers of Mechanical Rubber Products • Rubber Covered Equipment • Radiator Hose • Fan Belts • Brake Linings • Brake Blocks • Clutch Facings • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive & Diamond Wheels • Bowling Balls

textile bulletin

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Our Greatest Crisis

The people of the United States are facing what is probably the most critical time in the history of the nation.

Things have gone wrong in Korea and many are arising to criticize our sending troops to that country, but we fail to see how we could have done otherwise.

North Korea attacked South Korea and the United Nations, being pledged to protect small countries against aggression, had to send forces to repel the invaders.

Had the United Nations failed to help South Korea, it could never again have claimed to protect small nations against aggression and might just as well have quit.

The unopposed capture of South Korea by North Korea would have been the signal for Reds to invade and capture other small countries and the day would have come when most of the world, including Great Britain and France, would have been under Communist domination.

When that day came the United States would be isolated from the rest of the world and would be subject to invasion from Mexico and possibly from millions of Communist forces which might have overrun Canada.

The suffering and losses which our forces have already suffered and are yet to suffer in Korea is, of course, deeply regretted but the fight they are making there may save the world, including the United States, from complete domination by Communists.

One thing we do criticize is sending our troops up to the Manchurian border without knowledge that there were 500,000 to 1,000,000 Chinese troops concentrated there.

We know from experience that our military intelligence service is inferior to that of other countries but the failure of our generals to know that the Chinese were being massed for an attack was inexcusable and resulted in the sacrifice of the lives of many thousands of our finest young men.

There are several million Nationalist sympathizers in China and it should have been a simple matter to employ enough of them to have been kept posted relative to the movement of the Red Chinese troops.

We may have to withdraw our forces from Korea but it will be well that we went to the aid of South Korea and demonstrated our willingness to oppose aggression.

Cotton Research

E. I. du Pont de Nemours & Co. has recently put in operation a plant at Camden, S. C., for the manufacture of "orlon" acrylic fiber, which has many desirable qualities. Last month the same company announced that it would spend $24,000,000 in the construction of a plant near Kinston, N. C., for the manufacture of another new fiber to be known as "Fiber V."

Union Carbide is presenting to the textile trade a new fiber which it calls "Dynel" and which it asserts is warm, mothproof, mildewproof, fast drying and resistant to fire, acids and alkalis.

How many years and how many millions would have to be devoted to cotton research to produce cotton yarns and fabrics which would be resistant to fire, acids and alkalis and have the other qualities of Dynel?

It is doubtful that the most extensive and expensive research could produce cotton yarns and fabrics with the qualities named, and furthermore, what good would result if it could be done?

The last cut rayon shipped from Japan prior to World War II was bought at 12½ cents per pound f.o.b. a ship and while the increase in the cost of raw materials would not permit any such price today, it does give the impression that rayons and other synthetic fibers can be produced at prices lower than cotton.

Cotton will always be used for certain purposes and certain fabrics but the field of cotton will be invaded to an ever-increasing extent by synthetic fibers.

From the test tubes of chemists other fibers will follow nylon, orlon, Fiber V and Dynel, and already manufacturers of synthetic fibers are discovering machines and methods of production which will greatly reduce their manufacturing costs.

When the editor of this journal was young, he and his parents read by oil lamps. Then came electric lights and no matter how much the oil lamps were improved they could not compete with electric lights.

When he was young, people rode in buggies and wagons but automobiles and trucks came and while efforts were made to improve the riding qualities of buggies and wagons by using better springs, they generally passed out of existence.

To many people "research" is a magic word and they seem to think that all that is necessary is to spend money for research and competition can be met. Research h accomplished wonders and created fortunes in many fields but the truth is that a very large portion of the total research done has accomplished exactly nothing.

Well-directed research is definitely worthwhile and to be favored but there is much research which is doomed before it starts and can only result in waste of funds.

Before spending money for any particular phase of research there should be definite objectives, as well as assurance that the chance of obtaining those objectives is reasonably good.

It is not wise to blindly enter a research program without definite objectives or without knowing that the products of the research, if obtained, will be able to compete with products which already exist.

What good would be accomplished by producing nails out of an aluminum alloy if they could not compete in price with iron nails already on the market?

It is most unfortunate that the cotton textile industry ever heard of the results of research in the paper industry.

Wood pulp was very inexpensive and when that low-cost product was converted into paper napkins, paper towels and paper cups the sales price was much greater and profitable industries were started.

The cotton textile industry heard about the results of research in the field of paper and many decided that all that it was necessary to do to accomplish equal results in the field of cotton textiles was to pay the salaries of chemists and provide the test tubes.

That thinking was neither logical nor sound and has resulted in a very large expenditure of funds without accomplishing any worthwhile results.

Research in cotton could seek to move cotton into bulk production at a low cost or into the high-quality field.

Even if ways could be found to reduce the price of cotton goods by bulk production, the cost could never be low enough to compete in price with paper or jute and all the research would be in vain.

If research in cotton textiles was directed towards adding high quality to cotton yarns and fabrics the results would be in vain because such yarns and fabrics would meet the competition of nylon, orlon, Fiber V, Dynel and many other fibers which have yet to come from test tubes.

Spending money for research just for the sake of research may be interesting but has failed many more times than it has succeeded.

TEXTILE INDUSTRY SCHEDULE

— 1951 —

Jan. 15-18—**PLANT MAINTENANCE SHOW AND CONFERENCE,** Cleveland (Ohio) Auditorium.

Jan. 22-24—Annual meeting, **NATIONAL COTTON COUNCIL,** Hotel Buena Vista, Biloxi, Miss.

Feb. 3—**PIEDMONT SECTION, A.A.T.C.C.,** Greenville, S. C.

March 5-9—Spring meeting and committee week, **A.S.T.M.,** Cincinnati, O.

March 29-31—Annual convention, **AMERICAN COTTON MANUFACTURERS INSTITUTE,** Greenbrier Hotel, White Sulphur Springs, W. Va.

April 3-4—**TEXTILE DIVISION, AMERICAN SOCIETY OF MECHANICAL ENGINEERS,** Atlanta, Ga.

April 21—**PIEDMONT SECTION, A.A.T.C.C.,** Raleigh, N. C.

April 23-27—**WET PROCESSING EXPOSITION,** 71st Regiment Armory, New York City.

April 30-May 4—**MATERIALS HANDLING EXPOSITION,** International Amphitheatre, Chicago, Ill.

May 16-18—Annual convention, **COTTON MANUFACTURERS ASSOCIATION OF GEORGIA,** Sheraton Plaza and Princess Issena Hotels, Daytona Beach, Fla.

May 16-18—**NORTH CAROLINA STATEWIDE INDUSTRIAL SAFETY CONFERENCE,** Robert E. Lee Hotel, Winston-Salem.

May 17-19—Annual outing, **CAROLINA YARN ASSOCIATION,** Carolina Inn, Pinehurst, N. C.

June 18-22—Annual meeting, **AMERICAN SOCIETY FOR TESTING MATERIALS,** Atlantic City, N. J.

June 21-23—Annual convention, **SOUTHERN TEXTILE ASSOCIATION,** Mayview Manor, Blowing Rock, N. C.

June 29-30—Summer outing, **PIEDMONT SECTION, A.A.T.C.C.,** Myrtle Beach, S. C.

Sept. 22—**PIEDMONT SECTION, A.A.T.C.C.,** Charlotte, N. C.

Oct. 4-5—Annual convention, **CARDED YARN ASSOCIATION,** Carolina Inn, Pinehurst, N. C.

Oct. 17-19—Annual national convention, **AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS,** Statler Hotel, New York City.

—1952—

March 3-7—Spring meeting and committee week, **A.S.T.M.,** Cleveland, O.

June 23-27—Annual meeting, **A.S.T.M.,** New York City.

Cotton will always be used for some purposes but its use can never be greatly extended. With jute and paper below and a multitude of synthetic fibers above, research can never move cotton very far in either direction.

A few weeks ago a man sought to sell us stock in a company which was to probe for oil in eastern North Carolina.

Unlike some who seek money for research in cotton textiles, *he did know what he was seeking to accomplish,* that is, he did know that he was seeking to develop wells from which oil would flow.

Those who enthuse about research in cotton textiles should be able to state what they hope to accomplish either in new products or improvements.

They should be able to say that if this or that can be done for cotton yarns or fabrics, they can be produced at such a low cost that they can compete with paper and jute or will have qualities which will enable them to compete with nylon, orlon, Dynel and a multitude of other synthetic fibers.

There is no reason to become angry with us because our thinking is different. We do not feel that research can do much for cotton except in the field of improving machines and processes of manufacture and in the very limited field of new uses for cotton goods.

A baseball player enjoys telling about the base hits and home runs he makes but carefully avoids mentioning the times he struck out.

Research has been a wonderful thing in many fields and we hear much about the products and processes which have been developed. For every success there have probably been a thousand failures in the field of research.

More money has been spent on cancer research than anything else in the field of medicine but almost nothing worthwhile has been accomplished in that field. Research in smallpox quickly produced a positive cure but many years in cancer research has produced little.

Research in turning wood pulp into napkins and other paper products has made millions for those in the paper industry but that is no reason to believe that research in cotton textiles will enable cotton yarns and cotton fabrics to compete with paper and jute in the low-price field or synthetic fibers in the higher field.

We have always supported every sound movement which we believe would benefit the textile industry but we cannot see how extended and expensive research in cotton textiles can produce glamorous results.

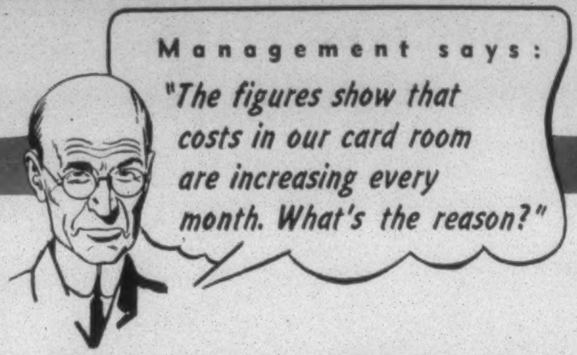
Moreover, we do not see that it makes much difference to a mill whether its spindles and looms are operating on cotton or on synthetic fibers.

W. H. Ruffin Honored

We congratulate W. H. Ruffin, president and treasurer of the Erwin Cotton Mills Co., Durham, N. C., upon his election as president of the National Association of Manufacturers and we congratulate that association upon securing a president of his ability and high standing.

It is seldom that such an honor has come to a Southerner but we feel that Mr. Ruffin is well qualified for the position.

He is a former president of the North Carolina Industrial Institute and the North Carolina Cotton Manufacturers Association and is now vice-president of the American Cotton Manufacturers Institute.


Management says:
"The figures show that costs in our card room are increasing every month. What's the reason?"

Manufacturing says:
"Most of our cards are badly worn. Efficiency and quality are down...maintenance costs are ruinous!"

Of course, they can easily solve their problem by installing . . .

WHITIN MODEL "L" CARDS

When badly worn cards result in lower production, inferior quality and excessive maintenance costs, both Management and Manufacturing must recognize the necessity for replacing the old machinery with modern, efficient equipment . . . or face the certainty of continuing and increasing financial loss.

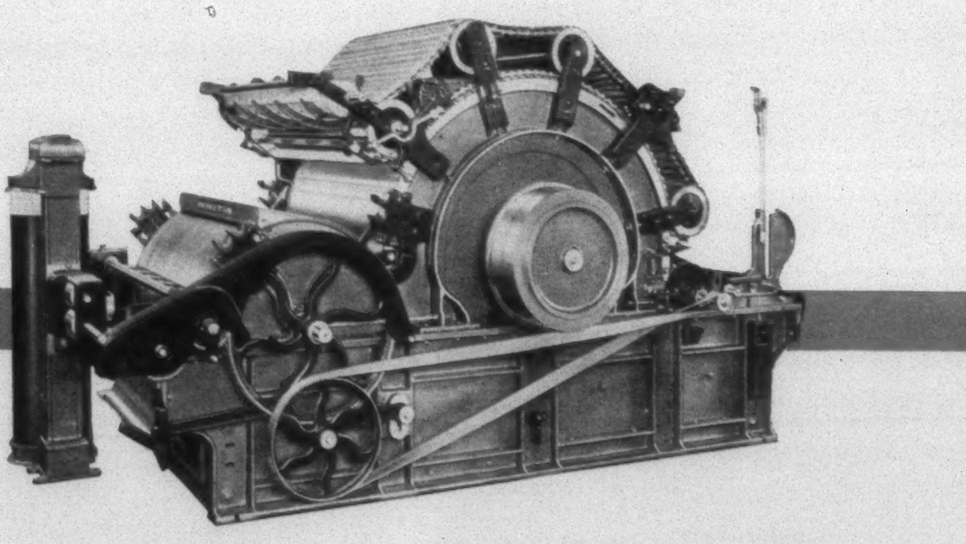
In mill after mill, where comparable conditions existed, installations of Whitin Model "L" Cards have turned the tide — have put the Card Room on a profitable operating basis.

A development of particular interest is the new *steel top flats* which are now standard equipment on the Model "L". Everywhere mill men are reporting enthusiastically on their performance — their greater rigidity, closer and better holding of settings, reduction in variation and more uniform sliver.

In addition there are many other features, resulting in more profitable, all-around operation, including:

- **Strengthened framework, cylinder bearings and arches contributing to easier maintenance of card settings.**
- **Oilite bearings in many locations insuring quieter operation.**
- **Restyled surfaces and contours facilitating cleaning and adjusting.**

Don't take our word for it. Why not visit a nearby mill where Model "L" Cards are operating, then send for your Whitin representative?



Write today for our illustrated folder giving complete details and technical data.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

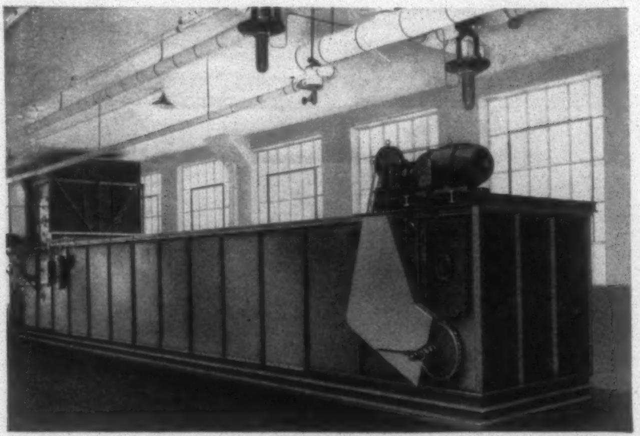
CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Check these advantages

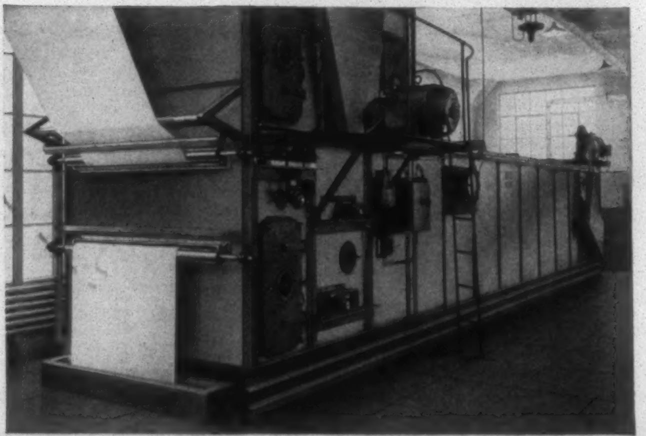
- Eliminates packing and roping of fabrics.
- Tends to protect fabrics to be dyed from chafe marks, rope marks and other distortions to the weave.
- Conveyor principle lessens danger of tangling and pulling of fabrics.
- Bleaching time reduced to less than one hour.
- Considerable cost saving over less automatic operations.

OF CONTINUOUS CONVEYOR BLEACHING

in the PROCTOR-MATHIESON OPEN WIDTH STEAMER



Caustic steamer in typical installation



Peroxide steamer in the same installation

Continuous conveyor bleaching as done in the Proctor-Mathieson system is meeting a long standing need in the textile industry.

Open width bleaching is accomplished in a continuous process by gently conveying the fabric through the caustic and peroxide steaming cycles, thus combining the advantage of continuous bleaching with a minimum amount of cloth pressure through packing, roping of the fabric or distortion to the weave.

The Proctor-Mathieson system is particularly applicable for goods that are to be vat dyed, since the conveyor system lessens the dangers of chafe marks, rope marks and other distortions which could cause defects in dyeing.

Ten commercial installations of this equipment are producing results that prove the advantages of this system in handling a variety of fabrics that are later dyed all shades.

Investigate the possibilities of the Proctor-Mathieson continuous open width steamer in your plant.

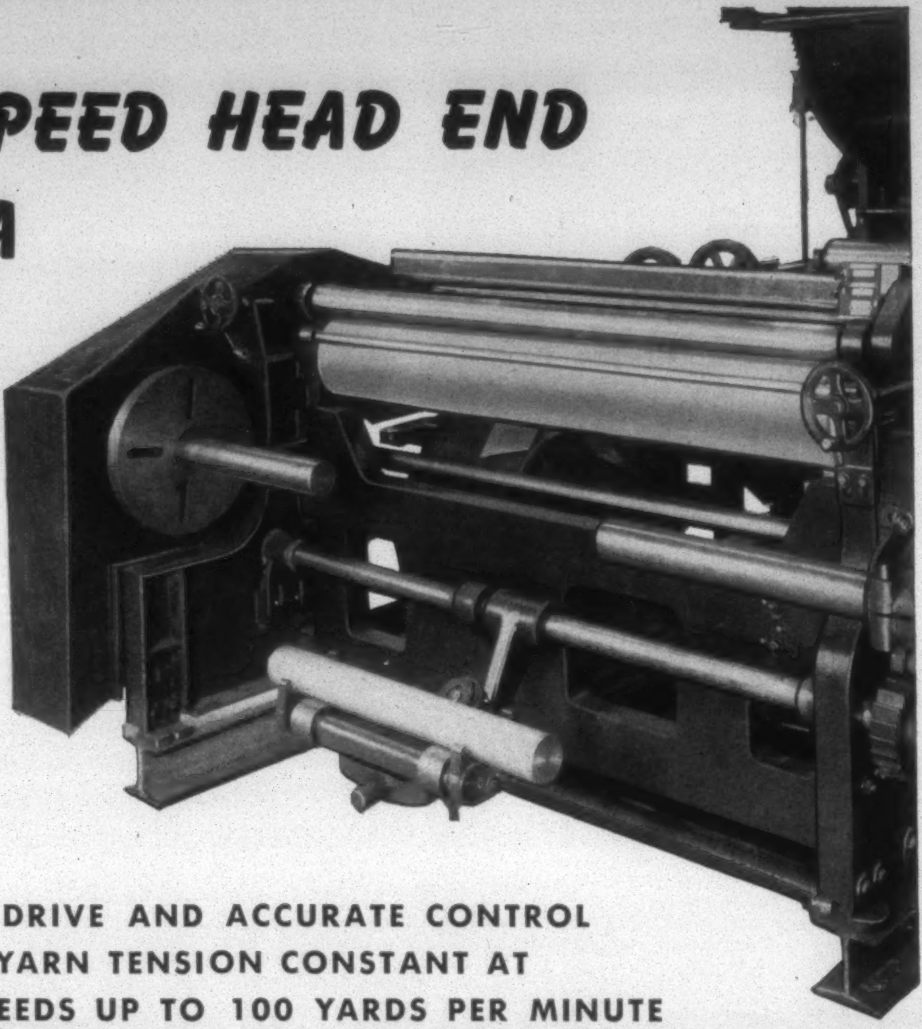
Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

PROCTOR & SCHWARTZ • INC •
679 TABOR ROAD • PHILADELPHIA 20 • PA •

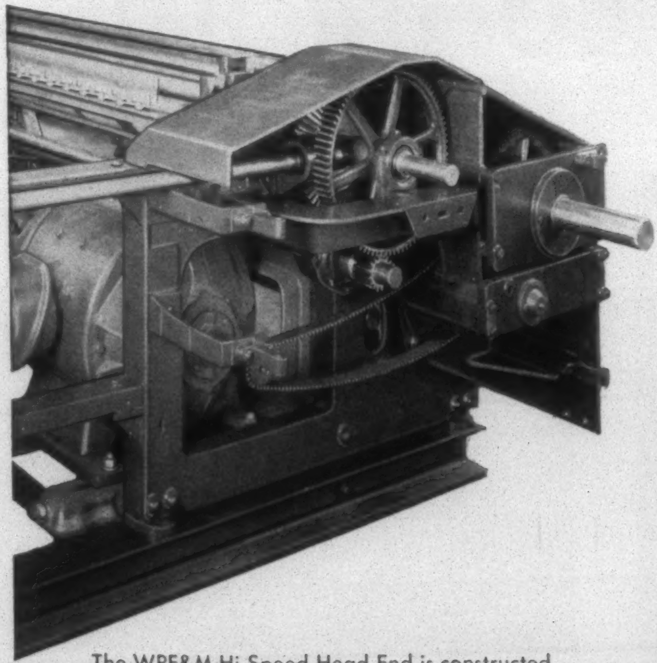
Designers and Manufacturers of

AUTOMATIC BLENDING and STOCK CONVEYING EQUIPMENT • CARDING and GARNETTING MACHINES • DRYERS FOR STOCK • YARN • PIECE GOODS • NYLON SETTING

A HI-SPEED HEAD END WITH A MIND OF ITS OWN



MULTI-MOTOR DRIVE AND ACCURATE CONTROL HOLD PRE-SET YARN TENSION CONSTANT AT OPERATING SPEEDS UP TO 100 YARDS PER MINUTE



The WPF&M Hi-Speed Head End is constructed throughout for heavy duty service. Gearing is simplified and eliminates frictional losses of old style clutches and speed cone drives. Drive and motors are completely covered, fully protected from lint and dirt.

Here's a Head End, equipped with Multi-Motor Drive, that accurately controls yarn stretch and tension at running speeds ranging from 20 to 100 yards per minute; a creep speed of four to six yards per minute.

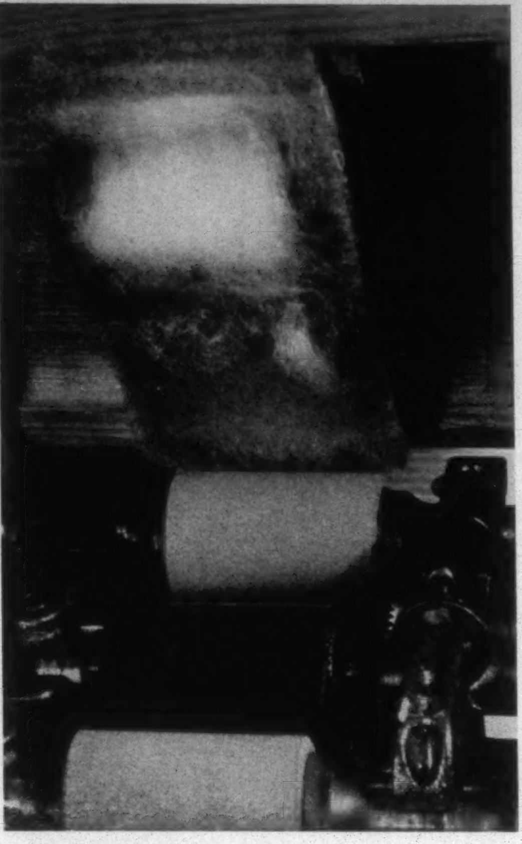
In place of old style friction, an individual motor winds the beam. Individually driven slasher rolls are synchronized by the Drive and controlled by a rheostat.

Indicating meters can be quickly and accurately pre-set to any desired yarn tension. Once set, tension remains constant—all beams are wound uniformly tight—from start to finish. After proper tension has been determined for a particular grade yarn, it can be duplicated at any time by merely setting the rheostat.

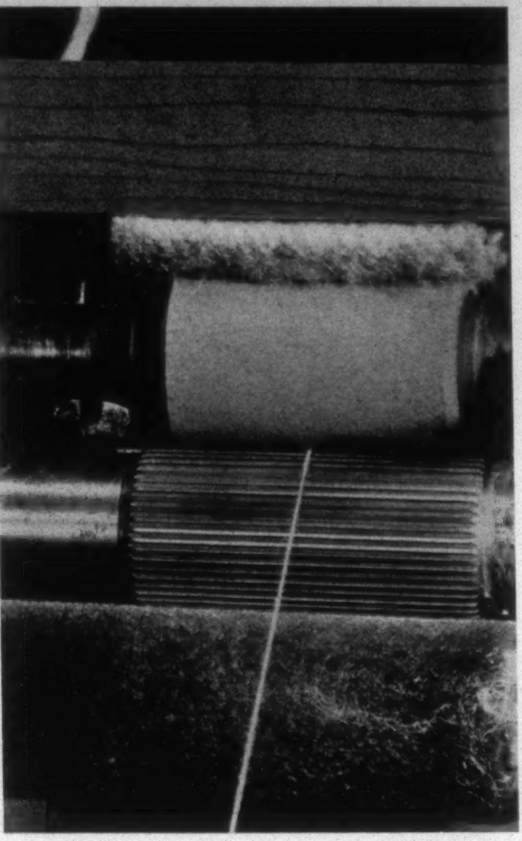
Elimination of costly guesswork adjustments means a better quality finished product . . . increased loom efficiency.

We will be glad to send you detailed information of this Head End's many other advantages . . . or make a survey in your slasher room if you desire.

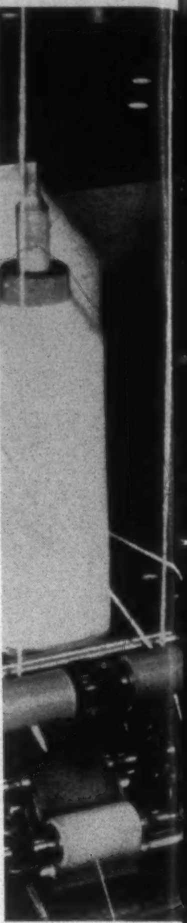
WEST POINT
FOUNDRY & MACHINE CO.
WEST POINT, GEORGIA



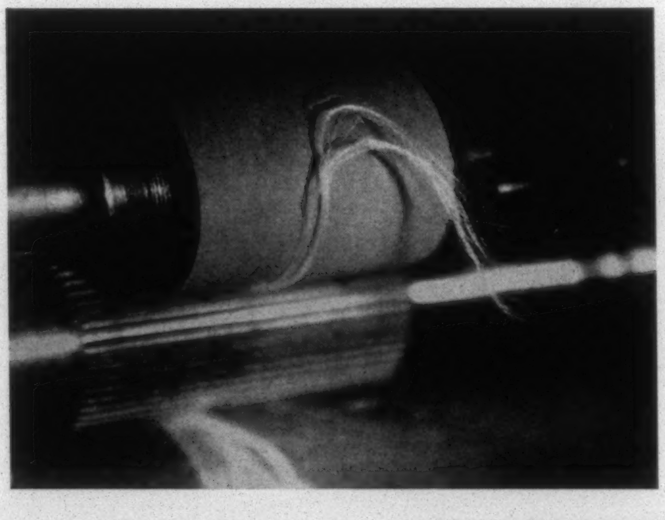
LESS EYEBROWING: The cork-dotted surface of NC-727 Accotex Cots has the friction needed to pack waste well back on the clearer where it can't be nipped into the yarn.



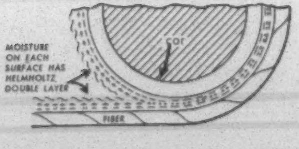
LESS SLICKING: Thousands of cork particles dispersed in NC-727 Accotex Cots make these covers resist slicking. Less frequent buffing is required and that means longer cot life.

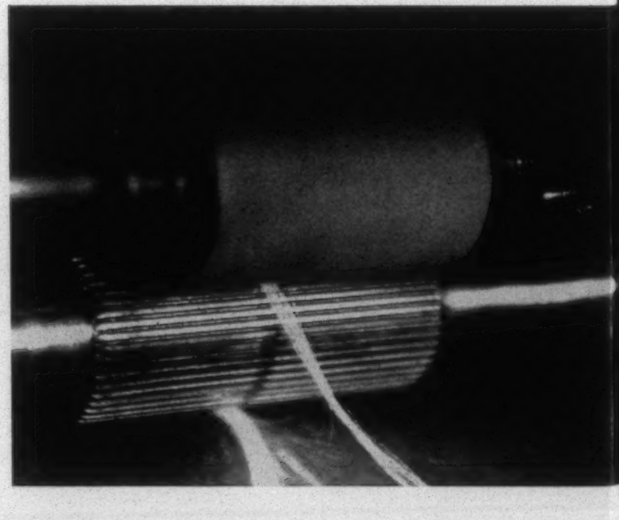


GOOD FIBER CONTROL . . .

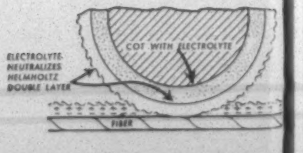


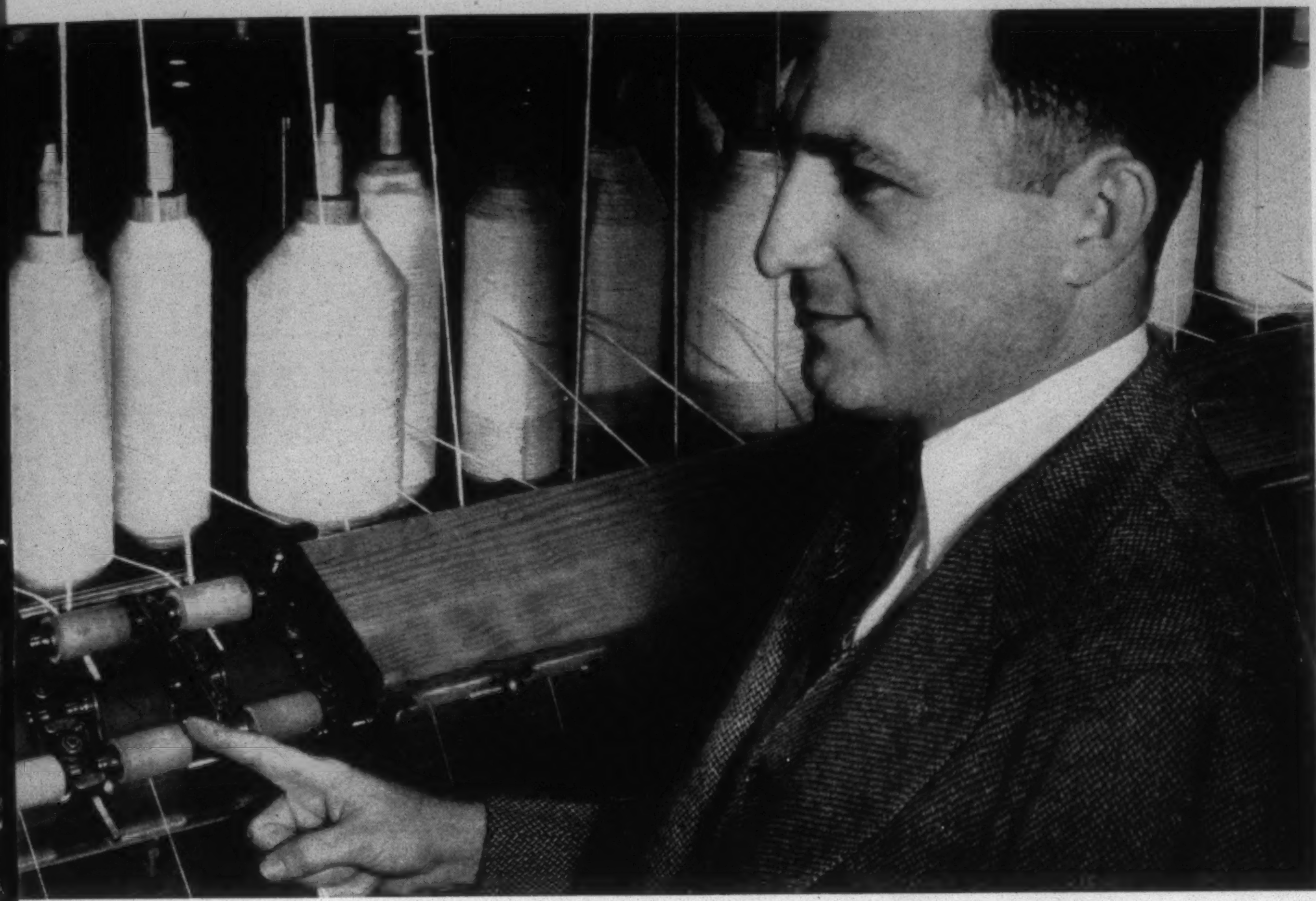
THIS COT LAPS. Moisture layers on fiber and cot contain electric charges that attract fiber to cot. When pressed together, the two moisture layers have the effect of adhering fibers to cot and causing them to lap up.





THIS COT DOESN'T LAP. Electrolyte incorporated in patented Accotex rubber composition neutralizes electric charge in moisture layer on cot. This eliminates attraction of fiber to cot and prevents lapping up.





MINIMUM MAINTENANCE

For best results, match roll coverings to your needs

Most mill men want two basic things in a roll covering: good fiber control and a minimum of roll covering maintenance.

The heart of good fiber control is good surface friction. Above all, a cot must draft well. It must also resist slicking, so that it will draft uniformly without frequent buffing. Finally, a cot should be both lap resistant and eyebrow resistant.

Minimum maintenance calls for a different set of characteristics. To insure the widest possible interval between re-coverings, use a synthetic rubber cot. A properly compounded synthetic cot is tough. At the same time, it should have lasting surface characteristics that make it unnecessary for you to grind its life away on a buffing machine.

Armstrong's Accotex® Cots are compounded to meet these mill demands. There's the popular NC-727 Accotex Cot, for example, a combination of synthetic rubber and cork that's so versatile it comes close to being an all-purpose roll covering. Its cork content accounts for its excellent eyebrow resistance.

Another Accotex Cot is the J-490, a straight synthetic cover. It's often used when synthetic fibers or blends are run on cotton system equipment. Like the NC-727, it is compounded with electrolytes. It's the most lap-resistant cot available.

Your Armstrong representative will gladly suggest the Accotex covering best suited to your work and arrange a test installation. Call him today. Armstrong Cork Company, Textile Products Department, 8212 Arch Street, Lancaster, Pennsylvania. Available for export.

ARMSTRONG'S ACCOTEX COTS

one of Armstrong's complete line of textile mill supplies

ACCOTEX APRONS **CORK COTS** **ROLL SHOP EQUIPMENT**

Serving The Textile Industry Since 1899

TWO GOOD REASONS FOR USING

SONOCO

STRAIGHT SIDE WARP SPINNING

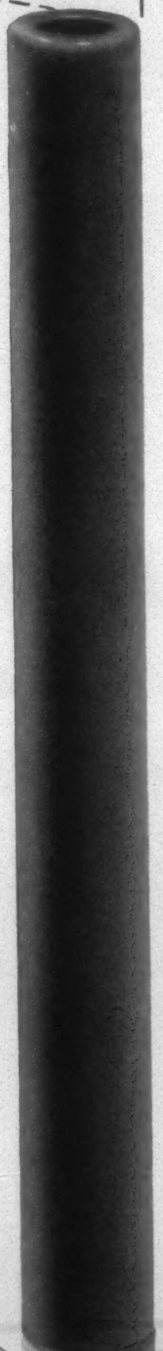
BOBBINS

1 **BETTER QUALITY YARN**

The SONOCO Bobbin's *straight side* allows a constant angle of yarn pull over the entire stroke. This gives uniform tension and results in more uniform yarn with a constant degree of elasticity throughout.

2 **INCREASED PRODUCTION**

The *straight side* allows full traverse permitting a larger package. Also, the SONOCO Bobbin is driven from the *top,* and this top suspension cuts doffing time by breaking sharply without drag or pull. These features mean an important savings in production costs.



Only SONOCO makes the straight side paper Bobbin. For further details contact your SONOCO representative or write direct to the nearest office.

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SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

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DEPENDABLE SOURCE OF SUPPLY

textile bulletin

VOL. 76 DECEMBER, 1950 NO. 12

The Cotton Textile Industry In World Crisis

By CLAUDIUS T. MURCHISON

Economic Advisor, American

Cotton Manufacturers Institute

EVENTS are moving swiftly. Within a short time we may from necessity be committed to a program of full-scale mobilization to meet the shock of World War III. If this occurs, it will be not merely a mobilization of manpower for the armed forces, but a mobilization also of the nation's economic facilities and resources.

Every industry is now appraising the probable demands which may be made upon it and the maximum contribution which it can make in the event of extreme necessity. The position of the cotton textile industry in both these respects should be viewed against the perspective of World War II. In that great conflict which is still vivid in memory, the industry reached production heights which had never before been attained and which were thought impossible of attainment.

The top year was 1942 when approximately 11½ million bales were processed for a fabric output of 11,108 million yards. The top month in that year was April when the average daily cotton consumption was 46,000 bales. In 1943, the second highest year, cotton consumption dropped to 10.7 million bales, chiefly because of the industry's loss of manpower to the armed forces, and a still further decline occurred in 1944, partly for the same reason and partly because of maintenance difficulties due to the scarcity of replacement machinery and repair parts.

Against this maximum production performance of wartime let us now place the greatest wartime military demand we have ever known. During the last war we had to supply not only our own textile needs, but for the most part, those of our allies. Germany and Italy had taken over the textile industries of all our European allies except England. England with a great textile industry was unable to use it to any appreciable extent because of the scarcity of raw cotton and the shortage of manpower. The Empire countries including Canada had very limited cotton manufactures and were normally importing countries. Likewise no substantial contributions could be made by Latin America. Accordingly, the entire burden of supply fell upon us. In this respect it is not unlikely that history will repeat itself. Even should the countries of Western Europe be able to repel invasion in the event of a war with Russia, it is not likely that bottoms would be available to supply them with sufficient cotton to keep their mills running.

We must take this into account when viewing the probable demands of an all-out war. The combined requirements of our own government and our allies during the last war constituted 51.4 per cent of the industry's entire output for the period 1942-45 inclusive. In 1944 the percentage went as high as 61 per cent. In the three years 1942-43-44 the war requirements of ourselves and our allies were in excess of 5½ billion yards annually, the equivalent of more than five million bales of cotton annually.

At the present time it is encouraging to look back upon this record but its accomplishment is written in many painful chapters. Since military requirements as to type and quantity of product do not coincide with the industry's normal production ratios, the character of the industry's output had to undergo radical change. A substantial number of new fabrics had to be developed and put into production for the first time. Others had to be trebled and quadrupled in quantity. This meant that non-essential fabrics had to be curtailed drastically or eliminated altogether. Even those fabrics classified as essential for civilian use had to be cheapened by reducing them to low-end brackets.

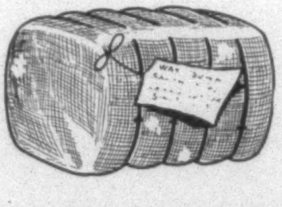
Such sweeping readjustments in an industry composed of a thousand or more independent units could not be accomplished by individual action. In order to meet the predetermined needs of the Quartermaster in the right type of product, in the right quantity and at the right time each mill had to be given its specific assignment. To do this required an exact knowledge of every mill's equipment, experience and capacity.

But from the human point of view which is after all the closest to reality, the memory of those days is filled not so much with the great record of output or the devices of control as with the extraordinary mental and physical labor of the individual members of management including top executives, junior executives, plant superintendents and overseers. The intense and unending nervous strain of their responsibility to get out the last pound and the last possible yard against all the difficulties of repeated production changeovers, high labor turnovers, over-worked machinery, shortage of supplies and compliance with innumerable government regulations reached in a majority of cases the limits of human endurance. Men aged prematurely, teetered on the verge of physical breakdown, or contributed to an accelerated mortality rate.

Such is the background. The picture now swings around a 180-degree arc and confronts us. What is the probable demand ahead of us, and what is our ability to meet it? The great expansion of the industry's production which began in August was fully adequate to provide for the program scheduled then. But that program is now obsolete. It is being stepped up as a necessary move to meet the increased emergency in Korea alone. It is probable that it will be given still further impetus by the increased danger of world-wide conflict. As I see it, the events of the past few weeks, taken alone, will serve to expand the rate of textile military procurement by at least 50 per cent above the originally conceived rate of need. This too the industry could take without undue effort although considerable readjustment of production patterns would be necessary in certain lines.

Our major concern, therefore, is whether the industry's powers of performance are adequate to the needs of a World War III. We have approximately a million and a half fewer spindles in operation than we had in 1942. At that time the number active was 23 million; in October of this year it was 21,695,000 which includes spindles on rayon. On cotton alone, the present number of spindles active is about 20,700,000.

However, it is probable that the spindle reduction has been more than off-set by increased spindle efficiency or capacity. Since 1945, the flow into the industry of new spindles and complementary machinery has been rather heavy although they have fallen short of the rate of liquidation of old machinery. From an annual average of about 323,000 in 1945 and 1946 the number of new spindles rose to 416,000 in 1947; to 607,000 in 1948; to 858,000 in 1949, and for 1950 the accessions are estimated by the machinery people at about 700,000, a grand total of new spindles amounting to about two and three quarter million. This means that approximately 12½ per cent of current active spindles on cotton and rayon are of the newest and most modern types. Of the remainder, a very large proportion have been virtually rebuilt, or improved by such modern mechanical refinements as could be applied to them.



Although in an individual mill spindle capacity can be readily determined in terms of pounds per hour for a given yarn count, it cannot be ascertained for the industry as a whole except within very broad limits. This is because the proportions of the various yarn counts, the number of working hours and the average mechanical conditions of spindles, along with certain other factors are undergoing continual change. In a situation of peacetime prosperity, demand increases for the finer types of goods, thus increasing the proportion of high count yarns and reducing the average spindle hour output per pound.

In wartime the situation reverses itself. Military requirements are mostly on the side of the heavier fabrics and will force a reduction of fine goods for civilian consumption. Consequently yarn counts average lower and spindle-hour capacity to consume cotton becomes greater. Over-all industry ability to consume cotton is also affected by the degree of continuity in production programs. The greater the number of changes in yarn counts and in fabric specifications, the greater the amount of time wasted in machinery adjustments and re-establishing processing relationships or compatability throughout the plant.

All factors relating to spindle capacity for the industry as a whole combine in such a way as to produce extraordinary swings in total performance. Over the past eight years variations in spindle-hour output per pound by themselves raised and lowered the industry's total production volume by as much as 12 per cent of the lower figure in the ratio. Ordinarily such an exposition would be regarded as academic and containing a high percentage of sleep-producing qualities, but just at this time it is the guide of major importance in estimating what we can do. It gives us probably 80 per cent of the answer we are seeking.

In the past decade the low point of spindle consumption per hour was 0.03889 pounds. The high point in April, 1942, was 0.04471 pounds per hour. In October, 1950, the last month for which figures are available, the output per spindle hour was 0.04158. This is 93 per cent of the April, 1942, spindle hour output. We know we can climb that difference, if necessary. Should we do that what will be the results in terms of bales? October consumption was 835,155 bales for a four-week period (to be exact, 19¾ days according to the Bureau of the Census). Consequently the daily average consumption was 42,286 bales. Increased by seven per cent the consumption on a daily basis would have been 45,246 bales. This calculation has exact validity of course only on the assumption that the same number of hours per week were worked in the two periods. In April, 1942, hours worked per week were about 116. In October this year a new record was set at 122.5 hours per week, and it was on that basis that the phenomenal consumption was attained. Nonetheless, if these hours can be maintained and if the spindle output per hour can be increased to the level of 1942, the annual rate of output will just about equal that of 1942.

However, it is my belief that spindle hour output can be considerably beyond that of 1942, if military demands reach as high a volume as they did in 1942. For reasons which I have already given present potential capacity per spindle is bound to be higher than ever before. Just how much higher cannot be ascertained except through the test of utmost urgency.

Although I have been employing terms of spindle hour output and average daily consumption, let us now convert those figures into the larger totals of annual consumption with which we are more familiar. October consumption was at an annual rate of 10,867,502. If actually achieved, such a consumption would be the third highest in history. For the entire first quarter of this crop year beginning in August the annual rate was 10,446,000 bales.

I have already measured for you the possible expansion which can occur from increase in the hourly output of present spindles as indicated by past experience. It should now be pointed out that a substantial increase in the number of active spindles is possible within the year. Something over one million spindles were classified as idle in October. There is reason to believe that from this number at least 350,000 can be returned to the active category. It is practically certain that further net additions to spindleage can be made from new spindle installations which hitherto have served as replacements. Under present conditions the rate of spindle liquiditation will certainly slow down and a high percentage of the new spindles will probably represent a net gain. Of course the big question here is whether the necessary steel supplies would continue to be available to the machinery manufacturers, in the event of all-out war.

Nevertheless, all factors considered, we are assured of a potential production performance of approximately 11½

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million bales if the degree of urgency should become great enough to justify it. In other words, we can if necessary duplicate the great record of 1942. Whatever concern we have, therefore, relates to the supply of raw cotton. In this respect, our situation is just the reverse of what it was at the beginning of World War II. We then had over 12 million bales of carry-over cotton, which at the time was regarded as a burdensome surplus. It was none too much, as it turned out.

In contrast, the present supply is perilously short; so much so that we are being forced to reduce our exports by about 2½ million bales to the great distress of other countries who are largely dependent upon us. Many reckless and ill-considered statements have been made regarding the adequacy of our cotton position and the wisdom of our export policy. As a result the thinking of most people is greatly confused.

But the facts are simple and at this date are quite complete for the purpose of appraising our outlook. The cotton carryover on Aug. 1, which is the so-called beginning of the crop year, was 6.7 million bales. As of Nov. 1, this year's crop is estimated at 9,780,000 bales (actual running bales). Imports normally add another 200,000 bales under our system of import quotas. This figure is not likely to be reached this year. Adding together the carryover, the estimated crop and the probably excessive figure of imports we have a total of 16,680,000 as our prospective supply. Of this amount how much will our American mills probably need? The consumption rate of the first quarter, as I pointed out is approximately 10½ millilon bales, the October rate being far higher. The armament tempo is speeding up.

Consequently, you will agree that I am ultra-conservative in putting down 10½ million as the minimum consumption requirement of American mills, assuming of course no world war. Subtracting this from the total supply of 16,680,000 we have left 6,180,000 to take care of exports and carryover.

Export allocations already scheduled for the first eight months plus 250,000 bales earmarked for Canada plus another 100,000 bales that got out before the boom dropped, add up to 3,846,000 bales. Subtracting this from the previous residue, we have left 2,334,000 bales which if reserved entirely for next year's carryover would be the smallest in many years. But it is expected that this meager supply will be reduced still further by export releases to be made for the final four months of the crop year—April through July.

The carryover which we shall have on Aug. 1, 1951, will not be in any sense of the word a surplus. Although that date marks the theoretical beginning of the new crop year, it does not mark the beginning of new cotton supplies in any significant amount. The old crop must be depended upon for working stocks to keep the spindles running through the first three months of the crop year and at the same time provide for such exports as are made during that period. It takes time to harvest, gin, season and distribute the new crop and those few bales which reach the mill door in the early part of the season are not yet suitable for good spinning results.

The industry should have as an absolute minimum for safe and efficient operations a carryover equal to three months consumption at the going rate, and this minimum makes no allowance either for export needs or for emergency conditions. It even assumes that the available cotton is in the right proportions as to staple and grade and is so distributed as to assure consumption down to the last bale.

From the figures which I have given you on our rate of cotton consumption you can estimate in a moment what our minimum cotton requirements are likely to be in the first quarter of the next crop year, that is, August, September and October. Add to your estimate, your guess as to the right adjustment factor for unevenness of distribution and lack of right proportions in grade and staple. Without making any allowance for export in those three months, compare your total with the prospective carryover as now indicated. Then judge for yourselves whether the Department of Agriculture in its export allocations has been over-cautious or over-liberal. In any event, we have planned ourselves into a right tight situation, and that too should be a subject of fruitful discussion.

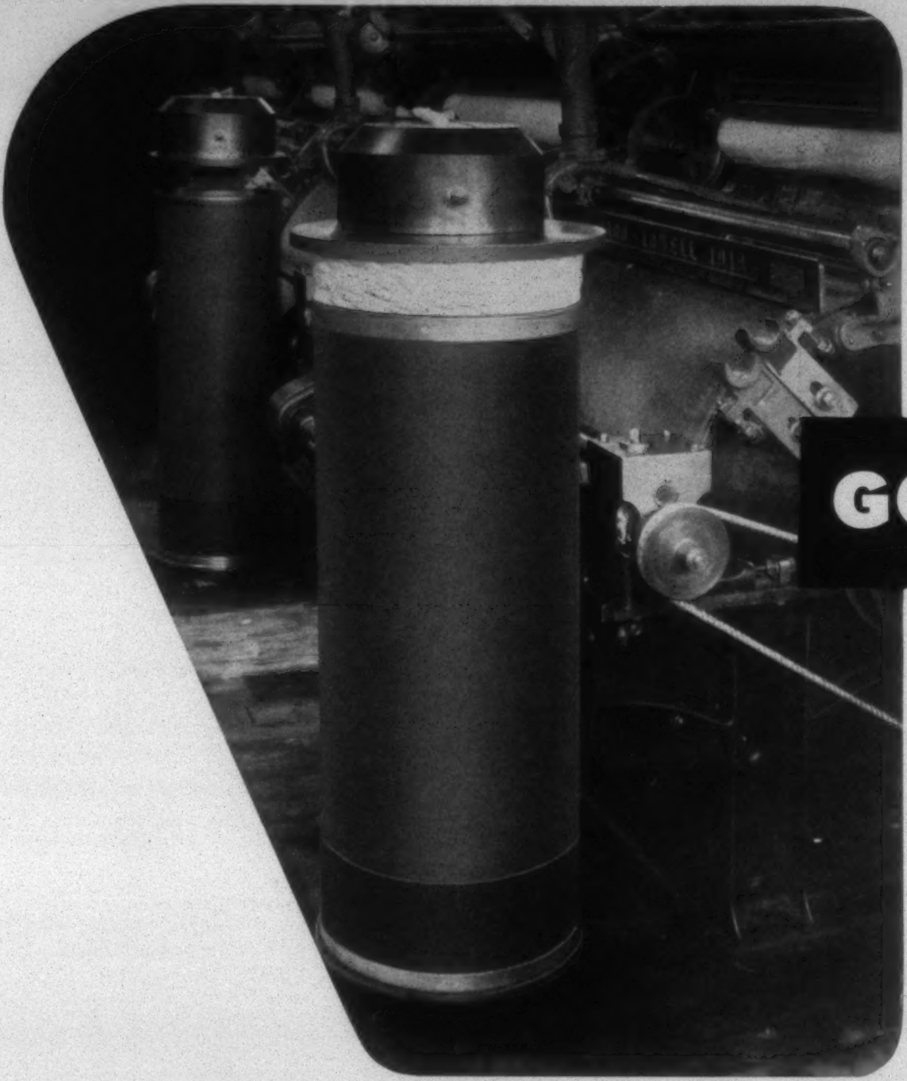
Dr. Murchison's comments are abstracted from an address delivered Dec. 5 at Raleigh, N. C., as one of the Benjamin B. Gossett series of lectures before the North Carolina State College School of Textiles.

The Rayon Supply-Demand Picture

By STANLEY B. HUNT, President, Textile Economics Bureau, Inc.

WITH the exception of the one year of 1949, United States consumption of rayon and other man-made fibers has increased every year since 1937; in fact, consumption usually has been limited only by the industry's installed capacity to produce. Rayon consumption in 1950 is estimated at 1,310,000,000 pounds, composed of producers' shipments of 1,235,000,000 pounds to domestic consumers plus imports of about 75,000,000 pounds, the latter consisting almost entirely of rayon staple. All divisions of the industry will ship more rayon in 1950 than in the previous record year of 1948 (1949 for high-tenacity yarn). Compared with 1939, the 1950 consumption figures show a 28 per cent increase for viscose+cupra textile yarn, a tripling for the acetate yarn, and a figure 3¾ times as large for staple. But the greatest increase has been in the viscose high-tenacity yarn, which is mainly used for the manufacture of tire cord and fabric, although increased usage in other industrial type fabric such as hose and belting is to be noted.

The peak year of the military use of rayon was in 1945, as noted, when 24 per cent of the total was taken. This military figure includes only the rated uses of rayon and especially the important poundage of high-tenacity yarn; the figure does not include the rayon allocated for the silk and nylon replacement and the export programs, which



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poundages would bring the total allocated use up to a rate of about 31 per cent. For the four years 1942 to 1945, the military uses of rayon aggregated about 520,000,000 pounds or 19 per cent of total consumption over that period.

The full extent of the military consumption of the man-made fibers in 1950 and 1951 is not known. A compilation of invitations to bid issued this year to date shows over 12,000,000 yards of rayon fabrics and over 19,000,000 yards of nylon fabrics. But the amounts of military procurement for the important rayon tire yarn, as well as any other nylon uses, have not been published. It is safe to say, however, that the man-made fibers will become a significant part of any wartime procurement of textiles in due time.

The imports of rayon and its products are principally confined to rayon staple on a poundage basis. As for the raw material exports, the poundage shown in the accompanying table mainly consists of rayon filament yarn. In addition, however, there is a substantial export business in rayon woven fabrics as well as tire cord and fabric. According to a recent estimate we have made covering the first half of 1950, the over-all imports of rayon and its products were nearly equal to the exports thereof.

The current rayon prices of the largest producers are about 45 per cent higher than in 1939 except for the acetate staple which is ten per cent less. Further, these current prices are essentially the same as they were in the previous peak activity year of 1948, this in spite of substantial intervening increases in raw material and labor costs.

As shown in the table, world rayon production in 1950 is estimated at about 3,350,000,000 pounds, a 50 per cent increase over 1939 output and the largest figure on record. The current installed operable capacity of the world rayon industry is about 3,850,000,000 pounds and this will be increased to about 4,200,000,000 pounds by the end of 1951. Relating 1950 output to capacity, it will be seen that about 87 per cent of the operable equipment is being utilized; with United States plants running full, this means that the rest of the world's rayon capacity is only about 81 per cent utilized. It is understood that the main reason this productive capacity is not fully activated today is a shortage of dissolving wood pulp.

The 1945 world rayon production figure shown at 1,403,000,000 pounds reflected the results of war damage, raw material shortages, and similar factors in foreign countries during the last phases of the war. Further, that year's output was the lowest since 1936.

RAYON DATA, CALENDAR YEARS
MILLIONS OF POUNDS, EXCEPT PRICE

U.S. DATA	1939	1945	1948	1949	EST. 1950
CONSUMPTION, TOTAL[a]	459	770	1,150	991	1,310
TEXTILE YARN	351	415	594	496	635
VISCOSE+CUPRA	247	245	304	245	317
ACETATE	104	170	290	251	318
HIGH TENACITY YARN	9	187	253	285	300
STAPLE	99	168	303	210	375
CONSUMPTION, TOTAL[a]	459	770	1,150	991	1,310
CIVILIAN	459	586	1,150	991	
MILITARY	..	184	..	..	
EXPORTS	2	23	20	17	15
PRODUCTION	380	792	1,124	994	1,245
PRICE/LB. IN ¢[b]	52¢	55¢	75¢	73¢	76¢
WORLD DATA					
PRODUCTION	2,239	1,403	2,450	2,705	3,350

a. Consumption means U.S. producers' deliveries to domestic mills plus Imports for Consumption.

b. 150 denier, 40 filament bright viscose yarn on cones. 1950 price is for September.

The foregoing consumption data have been based on United States textile mill consumption of fiber or yarn. We may now take the analysis for each fiber one step further by subtracting therefrom the poundage exports of fiber in the form of semi-manufactured goods such as cloth as well as manufactured goods such as clothing, hosiery, etc.; adding the imports of these same items; subtracting the military uses during the war period; and finally dividing this figure by the population. This result we call net civilian per capita consumption.

The 1950 per capita consumption at 41.0 pounds (first half 1950 x 2) is second only to the record year 1946 when the figure was 42.3 pounds. On an over-all basis, it also would appear that civilian per capita consumption of these three fibers during the war period 1941-1945 held up very well indeed. Compared with the decade 1936-1945, the per capita consumption of wool has increased and cotton has about held its own. But the real increase has taken place in the man-made fibers, where the first half 1950 figure was at an annual rate of 8.8 pounds per person.

Comparison of Textile Yarn Prices

The commonly quoted prices of textile fibers often are confusing because they are not uniformly based on the yarn form. Thus cotton and wool prices are usually quoted on the staple, while rayon filament yarn prices ipso facto refer to yarn. To demonstrate the point, the following data are prepared to allow a comparison of recent textile yarn prices per pound.

(1)	150-denier viscose filament yarn on cones	76c
(2)	150-denier acetate filament yarn on cones	76c
(3)	30s spun rayon weaving yarn on cones (the exact cotton system count here should be 36s to correspond to the filament rayon above, but this somewhat coarser yarn count is used because the 36s figure is not available)	70c
(4)	30s combed peeler cotton yarn on cones (same comments as under spun rayon above)	$1.00+
(5)	Bradford worsted spun 2/32s (64s), white weaving yarn (the exact count corresponding to 150-denier rayon should be 53s)	$3.00+
(6)	20-22-denier raw silk, D grade, corrected for approximately 20 per cent boil-off (the denier numbering system here is the same as for rayon)	$5.00
(7)	15-denier monofilament nylon on bobbins	$6.00

With the exception of silk and nylon, which are obviously much finer than 150-denier rayon filament yarn, the other price comparisons are based on yarn sizes that are reasonably comparable. It is often a surprise, even to those in the trade, to realize that today's prices of cotton and wool yarns are substantially above the corresponding rayon yarn prices.

Post-War Consumption Cycles

Based on some preliminary work we have done on the consumption of cotton and wool especially, there is evidence that the well-defined pre-war two-year fiber consumption cycle has returned. For example, the low phase of this first post-war cycle for both wool and cotton occurred in mid-1949 and the peak of the advancing phase of the cycle is indicated for the fourth quarter this year. Available data on the consumption of cotton and wool since the Korean incident in June indicate that that event had the effect of stimulating mill fiber consumption extra-seasonally this Summer, which fact would, in turn, hasten the arrival of the cyclical peak under normal circumstances.

In addition, it is believed that a combination of consumer buying habits as reflected in the mill consumption cycle, substantially higher fiber prices which have not as yet been reflected in the price of final consumer products at retail, the incidence of large installment buying balances of all kinds yet to be paid by the consumer, higher taxes of all kinds on consumer income, and similar factors will tend to preserve the indicated characteristic of the fiber consumption cycle for cotton and wool especially. On the other hand, the much lower relative prices of rayon and other man-made fibers may have the effect of continuing their high consumption rate to the detriment of cotton and wool consumption over the next six to nine months.

If these hypotheses on the trend of the all-important civilian consumption of textiles are borne out, the decline in over-all textile fiber consumption in 1951 would be several times as significant as any foreseeable, offsetting stability or increase in the military requirements for textiles.

The preceding material is taken from an address last month before the American Association of Textile Technologists in New York City.

Dean Brown Describes Improvements Made And Research Now Under Way At Clemson

AN ADDRESS by Dr. Hugh M. Brown, dean of the School of Textiles at Clemson College, Clemson, S. C., featured the Nov. 4 Fall meeting of the South Carolina Division of the Southern Textile Association held at Clemson College. Dr. Brown was introduced by J. C. Godfrey, superintendent of Calhoun Mills, Calhoun Falls, S. C., chairman of the South Carolina Division, who presided at the meeting.

After outlining some of the major improvements accomplished by the school's second large program of expansion, Dr. Brown then told the mill men of work being done at the school, some on a research basis and on practical work. His remarks, in part, follow:

One of the things that we have developed here is a new hand tensionometer. It can be put on the yarn and set by the thumb while it is on the yarn. No attempt is made to read it on the yarn. It can be taken off and the reading remains, and then it is read. We feel that instrument has some merit as a hand tensionometer.

We have developed an instrument which some of you have seen, a new fiber-tensile tester to replace the Pressley fiber tester or do that work in a better manner. The force is applied with no moving weights at all; the force itself comes from the spring. So there is no friction and no traction while the break is being made. A record is made on a chart at the time. You can take your six breaks or your ten breaks, and all are recorded on the chart. We find the machine has a considerably improved coefficient of variation in the test, and it can be easily calibrated.

We have also tackled the measurement of fineness of cotton, the weight per inch, by means of air flow and published that work with the Textile Research Institute. Concerning the possibility of really measuring weight per inch, for certain varieties it shows the error would be rather large in a single reading. The thing really measured in such a reading is the area, the surface area. There is work going on in Tennessee and also some here by making two readings by air flow, two readings taken rather quickly, which will show the weight per inch and the fineness and the surface area of the fibers, from two readings. I believe it is recognized that you can not get the fineness on one scale with the existing air-flow instrument.

We have had another project on the let-off motion. In the mills I see these wonderful and fearful let-off motions, all seeking to get constant tension. The question occurs to me, why do you want constant tension? Someone told me that you have six per cent more warp yarn than you get cloth, and I wondered why you could not just feed in six per cent more warp yarn. Someone said: "Well, you will have a little heavy filling, and the warp will get tighter and tighter." So we set up an experiment of actually letting the warp ends feed, the same as you use on terry looms all the time, and let it feed at a uniform rate, letting the tension go where it would. Then we fixed a sensitive means of measuring the tension in the warp while we were weaving. To make a long story short, we went all the way from 11s to 33s filling, and the loom would stabilize at its new tension for the fabric and go on and weave all day. If you kept the tolerance within three or four numbers you could tell scarcely any difference in the cloth at all. So far we can not see any difference at all in the cloth. I think for some reason maybe the cloth might be slightly better, certainly in some constructions, if you do that. The tremendous advantage, as I see it, is this. On every loom you have a few threads hanging out, and you run around and take the tension, then take some weights off and measure the tension again. You know very well the tension is not the same right after taking a weight off as it was before, so you tell the people to put in or take off a gear. You are not fighting for constant tension at all; you are just giving it out.

Of course, it is not as simple as I said, but the biggest surprise to me is why it has not been woven that way all along. Why are not the looms made that way? I believe we have a company that is going to make up some looms with a constant rate of let-off instead of constant tension let-off, so you do not have to go out and find what the tension is. Maybe it will work.

We had a project here with the government in which, for its purposes, it wanted to weave some 60-inch sheeting out of various amounts of rayon, up to 100 per cent rayon. I do not know whether any of you would want such a thing, and you might ask who would want such sheeting. Well, the government did. We found that we could not weave the fabric with the temples that we had. Every time we put a temple on that would hold this type of sheeting it would damage it, but you could take hold of that fabric and hold it out to the end and it would be all right. We fought the thing for about a month and thought we were not going to be able to fulfill our contract. Now, I am not a textile man; I am a physicist. I said: "Why not make a thumb and finger to hold it?" So we tried that; we made a thumb and finger to hold it and put on an exceedingly narrow temple, that would not damage the fabric out in the body of the fabric at all. We have had it tried in several mills, which report that they have better results than ever before. There are a few mechanical difficulties which will be solved. Instead of the fabric's being different for the first three or four inches it is uniform, because it is held the full width of the cloth. We had someone looking at it who said: "Well something like that has been patented two or three times, and there must be something wrong with it or it would have been put on the market." But now we have a company that is going to make a real effort to put it out.

When I first came over here I thought something might be done about spinning and twisting, perhaps a lot of things that had never been done before. We ran on a lot of things in twisting, particularly in connection with spinning, and came on a method before

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we heard of this Hegemax. Before we heard of that we had done this work which I am going to report now. We found that if we could twist the yarn right up to the bite of the spinning roll, come down through the thread guide, come down around the spindle to the traverse ring, if you could make this twist feed right up into the bite of the roll you would preclude the possibility of false drafting right in the front and complete the yarn. Ordinarily it is not fully twisted until it reaches the traveler ring. Then you could put on a much heavier traveler. Incidentally, if we have higher tension we can use a heavier-weight traveler. If we use heavier weight it will carry the heat away from the traveler. If we could use a heavier traveler on the same size of yarn we could put the speed up higher, because there would be a heavier cross-section to carry the heat away. So we tried this experiment on No. 11 and ran up to 18,000. Of course, with that speed we would have a good many ends down, but we could run it. By dropping down to 13,000 we found we could keep the ends up and could hold the bloom nice and straight and could run. But, again, probably you could not do that in the mill.

About that time we saw all the glowing accounts of the Hegemax, the Swiss invention, for which they claimed they could reduce the ends down by 70 per cent. We just hope you can do it. We have not as yet been able to verify that. As a matter of fact, you can reduce the number of ends down up where the yarn is tender and not fully twisted. You can meet that by putting in some surplus twist and then taking it out later.

We put in on one side two-inch rings, with separators, with just barely room for the travelers to pass, and were getting the same number of ends down so far as we could tell. We tried to go to as high speed and as high tension as we could with the same number of ends down. Our full bobbins have three times the amount of yarn as others. It would reduce the doff by 38 per cent. This is partly because it is wound tighter and partly because of using a heavier ring and because we have no bloom trouble.

Another way to take the gain out, if you want to, would be if you could make the same number or size out of shorter cotton or cheaper cotton. I grant, of course, that you would not have as good yarn, but you would have your yarn. You could take the gain out in some other way. How do you do it? I think you have read how Hegemax does it. We mount a little roller. Down through the ages we have twisted yarn with the thumb and finger; we have all done it. We have showed you that you do not need the thumb; instead of the thumb we have a rubber-covered roller. We get about 20 to 30 per cent surplus twist. That twist comes out as soon as it passes the roller, and you come back to normal twist. We believe that you never get any drafting after you pass the roller. You reduce that false draft. We believe that if you twist your fibers barely up to the twist you want they will go back, because they are springy; but if you twist them beyond what you want you get the desired twist.

E. L. Cantrell of Inman Mills was elected chairman of the division's weaving section. His selection was unanimous.

Opening, Picking, Carding & Spinning

Yarn Defects At The Spooler

By L. M. HOWELL, Howell-Willson Co., Greenville, S. C.

IT becomes increasingly evident that none of the current yarn-cleaning devices in use on both spoolers and winders can be depended upon to do a wholly efficient job in the removal of defects which have been spun into the yarn, and for this reason it seems desirable to take such steps as are possible to prevent the occurrence of at least a portion of these defects at their source.

Defects found in the yarn may be broken down into three major classifications: gouts, loose lint buttons on the yarn, and spinner piece-ups.

Gouts

As to gouts found in the yarn, certain basic principles should be kept in mind:

(1) Gouts must of necessity originate either in the card room or in the spinning department, and in this connection we would point out that they are not made at the spooler or winder. Under certain circumstances loose lint buttons may be created at this process, but not the actual gout. A gout consists of some foreign matter spun either in or around the body of the yarn.

(2) With few exceptions, gouts are composed of clearer or fly waste picked up at some process in either the card or spinning room. This waste, whether fly or clearer, will almost always be found to be of a darker coloration than that of the cotton itself.

(3) The current yarn guides or cleaners are more efficient in the removal of certain types of gouts than they are on other kinds. While all of you know that most of our experience with yarn-cleaning devices is centered around the one in use on the automatic spooler, we have made it a point to conduct these cleaning tests on other types of winders as well. While the results obtained so far are by no means conclusive, the indications point to about the same degree of efficiency or deficiency in the removal of certain types of yarn defects on all makes of equipment. Our tendency, naturally, is to favor the breaker-type snick plate.

(4) It has been our experience that gouts composed of clearer waste, regardless of its origin, are the most difficult to stop, but especially those formed from clearer waste picked up in the card room. This is for two reasons: first, these gouts as a general rule are pointed, and second, clearer waste has no body or staple. In fact, such gouts consist of not much more than fuzz. For this reason the teeth of the cleaning blade have more difficulty in securing sufficient hold to lift the blade and break down the running end.

(5) The snick plate is more efficient in stopping gouts composed of loose fly. On the other hand, there appears a greater tendency to skin the gout up and form a loose lint button, which may either be stopped or be passed to the cheese. We also note a decided tendency to form lint buttons from gouts resulting from clearer waste picked up from flat clearers at the spinning.

The breaker-type snick plate will not manufacture gouts. What may appear to be a manufactured gout is the result

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Mr. Howell spoke Nov. 4 at Clemson, S. C., during the Fall session of the Southern Textile Association's South Carolina Division.

in some instances of the teeth of the blade stabbing at a soft gout and getting only a portion of it. In other cases the entire gout may be skinned off the running end and held in the blade of the snick plate. The construction of the gout is such that the foreign matter of which it is composed is insecurely held to the main body of the yarn by only a few fibers. It has also been determined that the higher the spooling speed, the greater the tendency to form loose lint buttons out of the gout in the yarn.

Spinner Piece-Ups

On the newer types of spinning frames, it appears that the top rolls over-extend the steel rolls to a greater extent than on the old conventional frames, and this apparently creates slightly more difficulty in the spinner's piecing up the end. Either consciously or unconsciously, the spinner momentarily stops the scavenger roll while piecing up the end. As a result of this practice, we find a good many spinner piece-ups both stopped or passed by the snick plate, with a gout formed from scavenger roll waste picked up about one inch back from the piece-up.

On some loom tests which we have conducted, we found defects of this nature to total from five to ten per cent of the total number removed from the sheet of yarn at the back of the looms included in the test.

On the basis of tests we have made, as well as on the basis of considerable information furnished to us by a number of carders and spinners, it would seem that there are about 11 major sources of gouts. These we list as follows, with some explanatory comment on part of them: (1) Clearer waste from top and bottom clearers picked up by sliver at the drawing or slubber. (2) Loose fly brushed or blown down from overhead into the sliver at the back of the drawing or slubber. (3) Accumulated fly around trumpets at drawing heads. (4) Tags of loose fly formed on the edge of the roving cans at the back of the drawing or slubbers, this applying largely to combed cotton and spun rayon. (5) Clearer waste from flat clearers at spinning. (6) Loose fly that has settled on full bobbins of roving on top of the creel or after setting in. This does not apply in mills with traveling cleaners. (7) The spinner momentarily stopping the scavenger roll when putting up an end. (8) Fly waste picked up by the running end when cleaning the scavenger roll. (9) Scavenger roll waste picked up by the running end when the roll is cleaned. (10) Use of compressed air for cleaning in the spinning room, both the frames and overhead. (11) Piecing-in full bobbins of roving in the creel by the spinner. While there are, of course, some other sources of gouts, these are believed to be the major ones.

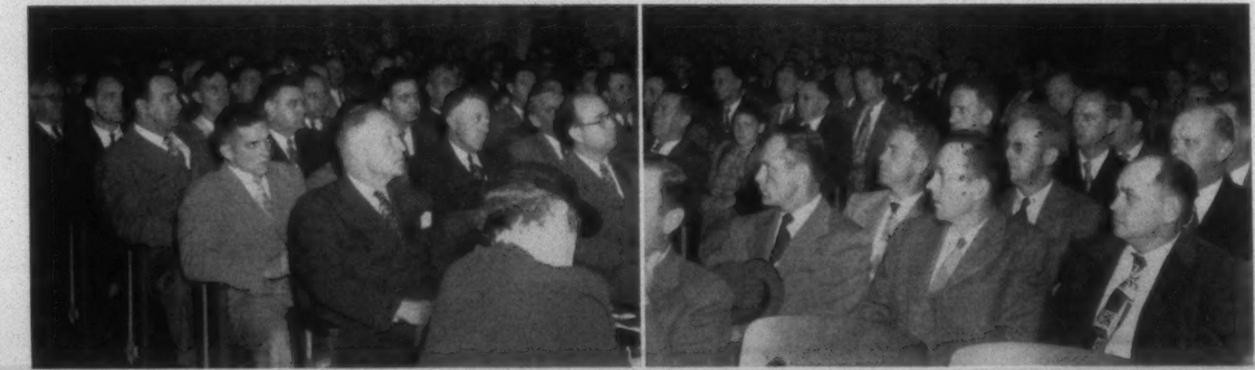
Clearer waste from both top and bottom clearers picked up by the sliver at either the drawing frame or the slubber—It becomes increasingly apparent that gouts from this source occur in greater quantities than at any of the other processes. It has also been noted that many of the gouts resulting from this source are of such minute size and of such character that none of the yarn-cleaning devices in operation are sensitive enough to remove them.

In one instance we injected between the rolls at a drawing frame one small swatch of top clearer waste of such size as might drop or be pulled off a top clearer. This waste was dyed with colored powder, in order that we might trace it through the following processes until it was spun on a bobbin. From this one small swatch of clearer waste injected at the drawing frame we recorded a total of 128 defects. It is, of course, understood that these extended over a great many yards of single-strand yarn. Some of these defects were so minute that they would have been taken for thick places in the yarn except that they were colored, indicating that it was clearer waste picked up as far back as the drawing.

We have injected these small swatches of colored clearer waste into the rolls at the drawing in a number of instances and have followed it through to the bobbin. Such bobbins have been spooled or wound through the current yarn cleaners, which we have found to be but from ten to 20 per cent efficient in the removal of such defects. There seems but little doubt that the introduction of high draft in the card room has tended to increase materially the occurrence of fly and clearer waste in both the spinning and the carding departments.

It is generally accepted practice to clean the top and bottom clearers on both the drawing and the slubbers on the doff. Assuming that the accumulation with high draft is greater, we ask the question, "Is this often enough?" We admit, that in cleaning clearers in the middle of the doff on the drawing and slubbers, there is a possibility of making gouts. On the other hand, if the accumulation on the clearers becomes great enough, it can be expected that small bits of this waste are going to be bitten off into the sliver. This will result in small gouts which will not be stopped by the yarn cleaner and which will as a result cause minute defects to be passed to the cloth.

Gouts formed from clearer waste picked up at the drawing, while similar in construction, occur in greater quantities and some are of more minute character than if the same clearer waste were picked up on the sliver at the slubber or the speeder, as the case may be. With cotton the clearer waste picked up on the top and bottom clearers at both the drawing and the slubbers appears more nearly equalized as



In attendance at this Fall's meeting of the South Carolina Division, Southern Textile Association.

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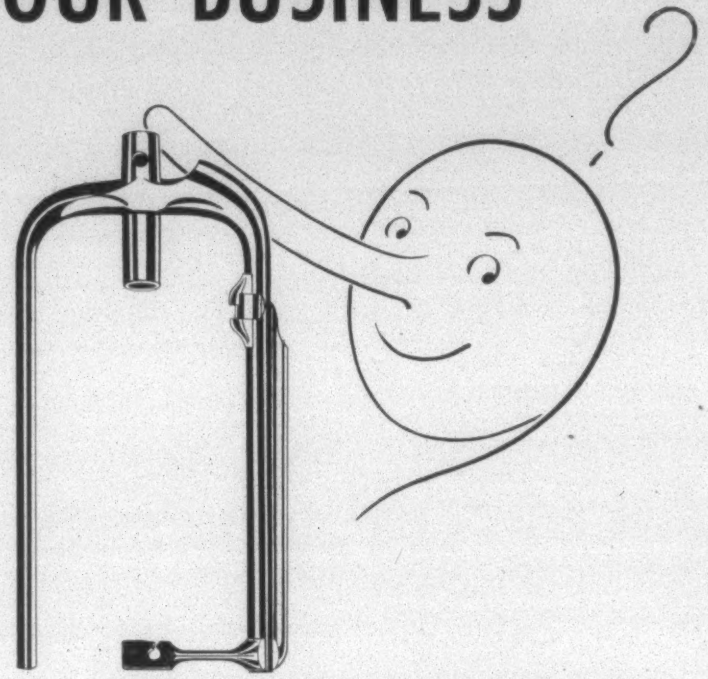

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to quantity than is the case with spun rayon. With the latter the accumulation of clearer waste seems greater on the bottom clearers, and it apparently forms more rapidly.

On slubbers with Superdraft or Interdraft the accumulation of clearer waste on the top and bottom clearers is greater than with conventional draft, which of course is to be expected. This leads us to ask again the question, "Is cleaning the clearers but once during the doff, and that on the doff, often enough?" Because of the heavy formation of clearer waste, it would seem that the flat clearers on the drawing and slubbers are not yet the answer. On some of the newer slubbers a revolving clearer is in use over the front roll. While this is a big help, it does not yet appear that this is the full answer to this problem.

Clearer waste from flat clearers at spinning frame—Three combinations of clearers for cleaning the top rolls at the spinning frame are available. These are: (1) a flat clearer to cover all three rolls; (2) a revolving clearer over the front roll and a flat clearer over the two back rolls; and (3) a complete equipment of revolving clearers over all three rolls.

Newer frames are equipped with a bottom revolving clearer for cleaning the back steel roll. Surprisingly, we have found a relatively large number of these stuck up and not revolving. If this bottom clearer roll fails to turn, the accumulation of clearer waste is rather rapid and to the extent that it can contact the moving roving as it passes over the back bottom steel roll.

Surprisingly, again, some of the flat clearer felts form more eyebrows than do others, this being especially noticeable over the front top roll. This may result from the condition of the clearer felt or from the condition of the top roll itself. There seems little question that flat clearers are responsible for some of the gouts which get into the yarn. This may result from too long a period between cleanings or from the actual method of cleaning.

In the case of flat clearers over all three rolls, some spinners remove two slats at a time and rub them together. Others will remove one slat at a time for cleaning. But in the great majority of instances it seems that the general practice is simply to tilt the slat up and hastily pick off the clearer waste that has formed over the front top roll. If the cleaning is done in this manner there seems every possibility that loose bits of clearer waste left on the felt may drop off and get itno the roving.

It has to be admitted that the greatest accumulation forms at this point. But if that which forms over the apron and the two back rolls is never cleaned off, eventually the formation is going to become great enough for small bits to drop or be pulled off into the roving.

We appreciate the fact that, with revolving clearers, the top rolls are not kept as clean and there is greater possibility of lapping up. On the other hand, without as yet having any conclusive evidence to prove the point, it would seem that there is less possibility of making gouts with the revolving type of clearers than with the flat type.

We have asked the question in a number of mills, "How often do you clean your flat clearers?" and have obtained a variety of answers. Some say once a day or once a doff, and in one mill the reply was once a week. In the latter mill it would seem reasonable to assume that they are getting gouts from this source.

With the introduction of Interdraft or Superdraft in the plant it seems logical to assume that there is going to be heavier accumulation of clearer waste at the spinning frame regardless of the type of clearer used, but especially so in the case of the flat clearer. If this is to be accepted as a fact, would it not be practicable to arrange for more frequent cleaning of these clearers?

While it might not work out from a practical standpoint to do so, it would seem desirable if possible to clean the flat clearers while the frame is standing for doffing and at the same time clean the scavenger rolls. There seems little doubt that some gouts occur as a result of these two cleaning operations. Assuming this to be true, then by cleaning on the doff such gouts as made would occur in the first two or three feet of yarn spun on the bobbin. Further assuming that some of these gouts passed through the snick plate, they would be found on the last two or three feet of yarn wound onto the cheese. Such gouts would never show up in the cloth, as they would be unwound from the cheese and pulled into the suction tube on the next round of the traveler.

Scavenger roll waste picked up by running end when roll cleaned—The snick plate is almost 100 per cent efficient in the removal of gouts from this source. First, such gouts are relatively large; second, they are composed of good staple that is wrapped around the body of the yarn. This gives the teeth of the cleaning blade something to dig into.

Use of compressed air for cleaning in spinning room—The use of compressed air for cleaning in the spinning room, especially on carded yarn, apparently is a necessary evil; and there seems little doubt that this is a source of some gouts in the yarn.

In mills which have the newer type of traveling cleaners, which blow overhead as well as against the frame, the possibility of gouts from loose fly would seem less because it is not necessary to blow down overhead, or certainly not as often as before. We have wondered if it might be possible to clean the frames with less than full air pressure. If so, such practice would result in less stirring up of the loose lint.

In air conditioned spinning rooms, because of the heavy movement of air, we note a tendency of the loose lint blown from the frame to remain in suspension for a longer period of time before eventually settling to the floor. It is also noted that in air conditioned spinning rooms not equipped with traveling cleaners which blow overhead there seems a greater tendency for lint to settle on overhead objects.

In minutely picking gouts apart to determine their origin we have reached two conclusions: (1) If the gout is formed in such a manner that there is little or no twist in the drafted roving within the gout, then in all probability this foreign matter—either clearer or fly waste—was picked up by the roving prior to entering the drafting rolls at the spinning frame. (2) If the foreign matter composing the gout is wrapped around the body of the yarn and can be picked off, then in all probability it was picked up on the yarn after leaving the drafting rolls. The exception to this is clearer waste from flat clearers picked up by the roving within the rolls.

Panel Discussion

Following the presentation of Mr. Howell's paper, a panel discussion on the possibility of eliminating the defects described by the speaker was led by Charles A. Gibson

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[*Mr. A in following report*], president of Calhoun Mills at Calhoun Falls, S. C., and F. W. Poe Mfg. Co. at Greenville, S. C. Taking part in the panel were E. L. Cantrell [*Mr. G*], superintendent of Inman (S. C.) Mills; Newton G. Hardie [*Mr. E*], plant manager for Chicopee Mfg. Co., Walhalla, S. C.; J. B. Templeton [*Mr. B*], superintendent of the Abney Mills Poinsett Plant, Greenville; W. F. Howard [*Mr. C*], cotton mill superintendent at the Lyman (S. C.) Division of Pacific Mills; Joseph L. Delany [*Mr. D*], general superintendent of Joanna (S. C.) Cotton Mills Co.; and Furman Burton [*Mr. F*], superintendent of Pendleton (S. C.) Mfg. Co.

Mr. A: I want to emphasize to all of you, both on the panel and off, that I am asking what your opinion is on these questions and am not asking what you do in your mill. I think any of us who have had to run a job in a mill well realize that there are many times when we have to compromise between what we think should be done and what we should like to do, and we do a good many things to which we do not always agree. Sometimes we are limited by machinery, sometimes by atmospheric conditions, sometimes by the kind of help we have, and by job sizes and other things.

Mr. Howell mentioned and emphasized yarn defects caused by clearer waste. I should like to ask Mr. B what he thinks is the best way of picking the clearer waste at the drawing frames and roving frames. Never mind the spinning at this point. What kind of clearers do you think are best? Do you recommend the flat clearer or the Ermen-type clearer? I do not know anything about the Dan River clearer.

Mr. B: My opinion may be right or wrong, but I do not care for the Ermen-type clearer. A flat clearer with a good, substantial clearer cloth on it does do the job. There is a new type of clearer being developed now, with a synthetic covering on it, that shows real promise. It seems at this stage to be a real improvement over any drawing clearer we have had.

Mr. A: What about the method of picking and the frequency? Of course, I recognize that the frequency varies with the job.

Mr. B: If you have a good hard cotton, then it is necessary to pick only once. If you have cotton with a good bit of fly waste in it, as all of us seem to have this year, then it is necessary to pick more than once.

Mr. A: What about picking the spinning clearers, Mr. C, either the revolving clearer or the flat clearer?

Mr. C: We have the flat clearer. I have had no experience with the revolving clearer but understand it is much better. At present we are picking ours every four hours.

Mr. A: Has anyone on the panel any of the new type of revolving clearer?

Mr. D: I have some of a new type, not concentric but eccentric, so you get a sweeping motion. I am experimenting with that at the present time on our shade cloth yarns.

Mr. A: Here is a question I should like to ask Mr. E. Mr. Howell mentioned the back clearers or end clearers on the spinning frame and that sometimes he found them not turning. Do you have that trouble? What do you find is the best kind of clearer cloth, smooth or what? Or how do you keep them turning, anyhow?

Mr. E: I think everybody is troubled with that. Quite a number of mills have taken them out; they do not leave them in. I think if you are not going to keep them up and keep them clean you are better off to take them out.

Mr. A: Have you ever tried, instead of a roll covered with clearer cloth, something like a scavenger roll, covered with velvet or whatever they are putting on them now?

Mr. E: I have tried some pile fabric of nylon on the clearer. I think it keeps them cleaner.

Mr. A: Another point Mr. Howell brought out is piecing-up. We have a man here who is in a yarn mill. How do you teach your spinners to piece-up properly? What is the best method, Mr. F?

Mr. F: Well, twisting the end up of course is better, and the only way I know to teach them is just to keep on keeping on.

Mr. A: How long a tolerance on that tail thing do you allow?

Mr. F: Well, just the shortest length you can use. The shorter the better.

Mr. G: As to your question of a moment ago about the best method of instructing the spinners, we have had good results by taking the gouts and defects caught in the spoolers and placing them on a board and taking them back and showing the spinners what they are doing. That has been very helpful to us in teaching our spinners to piece up better, and we did have more trouble with our piecing-up than any other.

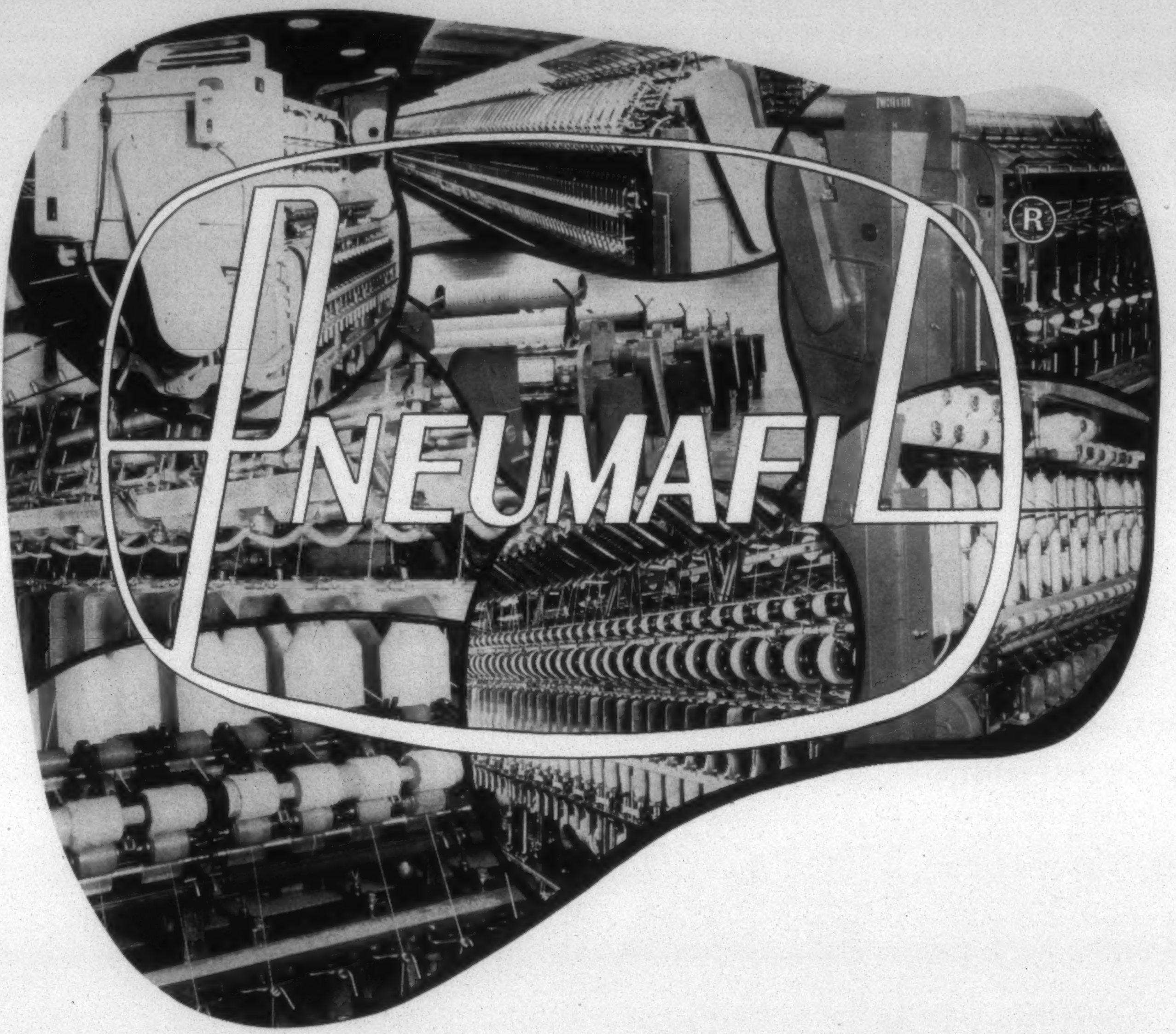
Mr. A: I know one mill on cotton that has done something like that, but instead of doing exactly that it has taken samples of piecing-up from every employee in the department and put them up on a board, with the names of the persons who made them. That shows what each person is doing.

Next, let's take up overhead cleaning. I should like to hear from those in the audience that have the overhead cleaning that blows down overhead as well as the spinning frames.

Mr. E: I like it fine.

Mr. G: We have overhead cleaners on the spinning and in the card room. We found it necessary to blow down the overhead once a day, but since putting in the overhead cleaners we blow down about every six weeks. That is, we did blow down at six weeks. I don't think it was exactly necessary, but it was beginning to show some kind of accumulation. So at the end of six weeks we blew down in spinning. In the carding department we have them, and we blow down over the cards about twice a week but

Pictured are the mill men who joined in the panel discussion of methods which might be utilized to eliminate yarn defects at the spooler. ***Left to right:*** **J. B. Templeton, W. F. Howard, E. L. Cantrell, N. G. Hardie, J. L. Delany, Furman Burton and Moderator C. A. Gibson.**



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other than that we do it at about every six weeks. The overhead cleaners have eliminated the necessity of blowing down so frequently.

Mr. G: We think we have cut our gouts about 50 per cent. I might say that at the same time we put in the overhead cleaning we stopped using compressed air on the spindles and idler pulleys. We clean the spindles with a little, stiff brush and clean our idler pulleys with a picker. It is a little slower, but we think we get better results.

Mr. A: Most of us these days use synthetic rolls, and it seems to me that a good many gouts come from the synthetic rolls on the flat clearer. One roll will have a piece of clearer waste sticking down one-half or three-quarters of an inch, and on the next it will be pushed back.

Mr. B: I think that is one of the most unanswerable questions of all. We do get gouts from that source. Some of them may be due to the condition of the clearer cloth or may be due to the cotton itself. Or something may happen in the mill so that you may pick up foreign substances and create a different condition on the outside of that cot. I know sometimes you can take cleaning fluid and wash off those cots, and they do all right. So to me that is evidence that something has happened in your mill.

Mr. A: Does anyone have any problem of the clearer cloth coming off one roll and on another pushing it back?

Mr. D: I can give you another thought on that. We find that the speed at which you move the roll across the surface of the buffing wheel affects it, if you do it too fast or too slow. The man doing it may leave one cot a little bit slicker than another, and that cot is going to eyebrow. He has to know what the spinner expects.

Mr. A: That is one thing that buffaloes me in going around the mill. I see one push it back, and another does not. Mr. Howell said these gouts are not made on the spooler.

Mr. D: We make spooler gouts. Frankly, if your spoolers are not kept clean enough, if you do not clean them regularly and clean them even before they need it, you are going to have some form of lint accumulation in there; and the yarn is going to hook onto that, and it is going to be a dark, discolored type of gout. We have, as this gentleman suggested, boarded our gouts, and we find that some of them are attributable to the spooler room.

Mr. Howell: In speaking of a gout I think possibly I did not make myself clear. I consider a gout and a loose lint button on the yarn two different things. It is entirely possible that you get loose lint buttons at your spooler, for a number of reasons. If your yarn has an accumulation of fly on it when it goes to the spooler, or if you have an accumulation of lint balls on it your ballooning end is going to blow into that and pick it up. When I think of a gout I think of something that is either in the yarn or spun into the yarn and is not on the yarn. But you can get loose lint buttons at the spooler for a number of reasons.

Mr. A: One more question, of Mr. Howell this time. Do you find in the mills to which you go that a majority of them set the clearers closer than recommended by the manufacturers? Let's stick to Barber-Colman.

Mr. Howell: In the mills we visit I would say we find them slightly more open than the recommended setting, although the trend seems to be for more and more mills to close up on that gap. In fact, we go to a number of mills in which they set them actually closer than the recommended setting.

Mr. A: Mr. Howell claims—I say "claims;" I assume he can prove it—that the snick plate and others of these yarn cleaners are only ten to 20 per cent efficient. On what?

Mr. Howell: On certain types of defects, primarily clearer waste.

Mr. A: Here is my thought. If you are making any clearer waste, eight out of ten parts of it is going through your clearers.

Mill Yarn Manufacturing Set-Ups Discussed At S.T.A. Meeting

FOLLOWING its usual Fall custom, the Eastern Carolina Division of the Southern Textile Association met Nov. 11 at the Erwin Mills Auditorium, Durham, N. C., with Divisional Chairman J. R. Meikle, general superintendent of Rosemary Mfg. Co., Roanoke Rapids, N. C., presiding. After introductory remarks by the chairman, and a welcome from W. V. Byers, manager of Erwin's Durham plants, the meeting was divided into two discussion sections, one devoted to carding and spinning, the other to weaving. An abstract of the former, which was presided over by Virgil E. McDowell *(left)*, assistant superintendent of Rosemary Mfg. Co. and a past president of the Southern Textile Association, is published on this and following pages.

Chairman: The first topic we have here refers to the spinning room, "Discussion of new type pin and cradle;" and under that we have these questions: "(a) Has it improved breaking strength; what percentage? (b) Has it improved yarn evenness? (c) What have you found to be its draft ranges?"

Mr. A: We are doing some experimental work with the Whitin cradle, the 54-mm. Casablanca type. The only important change is the type of pin we put in it. We tried it out on a Whitin sample frame, with adjustable roll stands, front and back. The yarn made was 32s carded warp, T.M. 4.55. We started with 3.00 hank double-creel roving, and after we started we found that the roll stands were different on the two sides of the frame. So the two sets of results that I have with the different roll settings I tried to correlate, and I have a graph here that shows the results we got.

Roving Used and Results

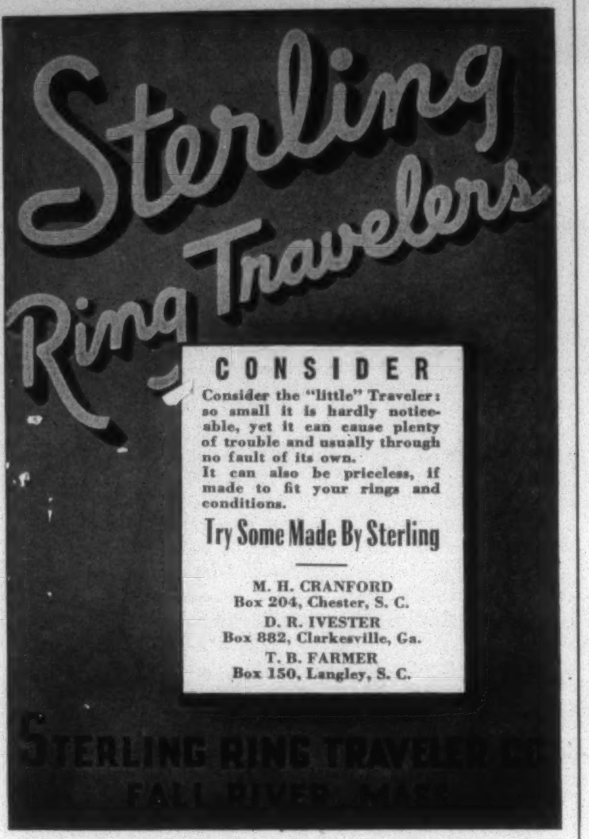
	B to M	M to F	B F	Draft
3.00/2	1 11/16	1 23/32	2288	21.3
"	1¾	1 11/16	2231	21.3
2.70/2	1 11/16	1 23/32	2231	23.7
"	1¾	1 11/16	2153	23.7
2.40/2	1¾	1 11/16	2044	26.7
2.20/2	1 11/16	1 23/32	1987	29.1
"	1¾	1 11/16	1877	29.1
1.50/1	1 11/16	1 23/32	2046	21.3

You see that as the draft went up the break factor went down. How much of this is due to the pin and cradle and how much to the roving I cannot say. We did find that with the closer roll settings we got better results than we did with the standard roll settings which we have on our frames, which is 1¾ to the back. This compares with what we were getting on the regular frames, 3.00/2 hank roving, break draft 2,010, draft 21.3. This shows an increase of 13.8 per cent with the close roll settings and 11 per cent with the wider roll settings.

On our 32s warp yarn, carded and combed, we used the two different types of pins Whitin is making now. They are a pin with a five-mm. clearance and a pin with a four-mm. clearance. We got better results with the four-mm. clearance pin.

5-mm. pin	1¾	1 23/32	2,081
4-mm. pin	1¾	1 23/32	2,120
Regular cradle	1¾	1 23/32	1,986

That is an increase of 6.7 per cent from the regular to the four-mm. That was 32s carded warp, T.M. 4.55, 3.00/2 hank



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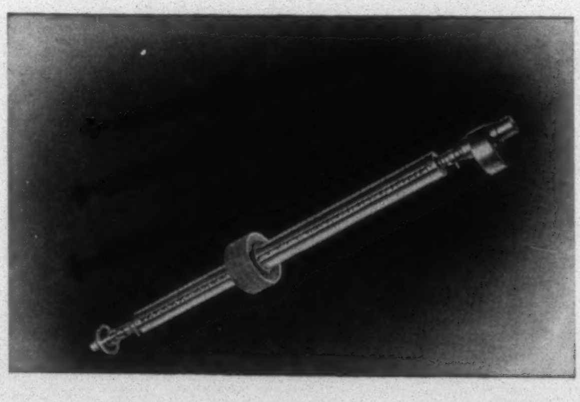

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Hugh Williams & Company, Toronto Canada—Canadian Representative roving. On 32s combed warp yarn, same twist multiple, 3.00/2 hank roving, we had the following results:

5-mm. pin	1¾	1 23/32	2,215
4-mm. pin	1¾	1 23/32	2,271
Regular cradle	1¾	1 23/32	2,118

The percentage of increase was 7.2 from the regular cradle to the four-mm. pin. So we realize we are getting an increase there and approximately half of the total increase that we got on the Whitin sample frame we got with the cradle on our regular frames, not changing the roll settings, 1¾ at the back.

We have an evenness tester with an integrator. There was a decided increase in the evenness factor; and, even with the small amount of data we have on it, I am convinced that it is making more even yarn.

Mr. Z: With the four-mm. and five mm. pin, did you find it necessary to change your roll setting?

Mr. A: We used the same setting. You try, of course, to get your apron up to the front roll. We used the same apron on the two cradles, so actually it is the same distance in there. However, we do intend to close up that front roll if it is at all possible. Right now it is as close as we can get it, but if we can saw it out and get it up closer the results might be better. We were using hank roving with double creel; we did not run enough single-creel roving to give you the results on that. However, I am under the impression you still can not go too high on it. That graph shows that the higher we went the more it went down. The break factor, however, went back up from 1,987 to 2,046. That was 21.3 draft.

Chairman: The U-pin goes through both aprons; and this opening or clearance that they talk about, four or five mm., is the space in there. This U-pin holds the aprons close together. The thickness of these aprons is involved, and the space between this pin is involved. That is what tends to grip the apron and hold it, and on that basis you can probably draft out more and still make good yarn. On the regular style these two pins are separate; they are not tied together in the U-shape. That part of the cradle is what you have to have new. You use the same apron.

Mr. B: Does the number of yarn or the hank of roving that you are drafting have anything to do with whether you use the four-mm. or the five-mm. pin? Does the diameter of the roving or the yarn have anything to do with it? Suppose you were spinning 8s yarn; would you use the same as for 30s or 40s?

Mr. A: I would venture to say that there would be a range where you could use the four-mm. and then you would go up to the five-mm.

Mr. C: We have just finished changing over one frame to this pin and cradle and have been spinning 30s warp from 1.10 hank roving. The break factor increased, and the evenness also increased quite a bit.

Chairman: At the present time most Whitin frames have an opening of 1⅛ inches, and there is no way to change that unless you grind the stand off. We have a frame at Rosemary and were using 1.00 hank roving. We found that the apron we use with this four-mm. U-pin grips the roving so tight, with the same roll setting, that it held the yarn so tight it made it cockle; and we had to open it up some when it was new. We opened it a quarter-inch and found the breaking strength was good. After it had run a while we closed it back up to one-eighth above the 1⅛. On 1.00 hank roving, we found that was the closest we were able to set our rolls. We went to .80 hank roving and found on the same frame some of the yarn was cockling on .80 hank roving, because you still had a larger diameter of roving coming through the apron. When we ran into that we adjusted our top rolls a little bit, just as close as we could to prevent cockling. That frame now is running on .80 hank roving on one side and on the other side on 1.00 hank with you might say practically the same roll settings. I believe the largest you used, Mr. A, was 2.20 double roving? Of course, you do not have the same thickness there that you have on 1.00 hank or .80 hank.

Mr. A: I wonder what effect opening the break draft would have? We have not tried that, and I wonder if anyone has.

Chairman: We have not tried changing the break draft. On that same question, I believe you had a range of only around up to 21. I believe 21 was the highest draft, was it not?

Mr. A: I had a draft to 29 on 2.20 double creel. The breaking strength did drop down some.

Chairman: What was the highest draft that you had with which you could maintain your breaking strength? In other words, that is the comparison you need. If you were making 32s yarn with a certain draft, how much could you increase your draft and still maintain breaking strength?

Mr. A: We went up to 32.7, and still had as good results as on the old cradle, which had a draft of 21.3.

Chairman: We found about the same thing on our fine numbers. The finest number we experimented with was 22s. We made some 22s out of 1.00 hank single roving on our old cradles and pins; and then we put some 1.00 hank in on the new pin and cradle, making 22s; and we found that in this particular case the new pin and new cradle did make a smoother yarn of it. It seemed to be smoother, although we did not make a test on it. But it did increase the breaking strength. We made some .80 hank roving and put that in on the old frames and old cradles, and we found that did not help. So we put this .80 hank in on the new pin and cradle, making 22s, and that gave a draft of around 28.90. We found that 22s yarn made out of .80 hank on the new pin and cradle was just as good as 22s yarn made out of 1.00 hank on the old pin and cradle. In other words, we went from a draft of around 23.40 to 28.90 and found that comparison. That is when you are running fine numbers and drafting more. We found a little difference when we came down to a coarser number. We made 20s out of 1.00 hank, single, and then came around and made 20s out of .80 hank, single. That gave us a draft of 26.5. So we increased the draft there, you might say, about six or a little over. We found that on this type of work (I mean on the coarser number—even 20s) our breaking strength on the .80 hank was still good, but it was not as good as the difference in the 22s. So on that basis we found, on the regular pins, using 1.00 hank roving, and putting 1.00 hank roving on the new pins, ~~the~~ breaking strength still increased and the yarn was good. On that basis we found the new pin and cradle made about .048 better breaking strength on 20s. When we put some .80 hank in to make that same thing we found that the .80 hank compared pretty closely to what our old pins and cradles were doing on 1.00 hank. So it goes to show this—on 20s, if we use .80 hank and put it on the new pin and cradle, we could make as good yarn and strong yarn as we were making with 1.00 hank on the old pins and cradles.

Coming down to a coarser number, 16½s, we find a still different picture. We made that on the old pins and cradle, 16½s out of 1.00 roving, which is our normal, regular operation. Then we put some 1.00 roving in on the new pin and cradle, making 16½s, and found them identical. In other words, coming down to a coarser number, by using the new pin and the new cradle when you come down to a coarser number you do not gain anything. What you are doing is shortening your draft; it is still down low. That is what we found. Of course, we have been running this test now for about a month and have been running it pretty thoroughly; and we believe that where the breaking strength is up to standard, using coarser roving, it still is all right for long draft. So it seems to me the pin and cradle are built for just what Whitin says, for increasing the draft. As long as we draft up to around 20 or 22 we find the new pin and cradle does not help very much. But when you step on up between 22 and 28 we find you can draft, with this new pin and cradle, between 22 and 28 and still maintain good yarn and increase your breaking strength. As long as Mr. A was drafting over 20 he found new pins and cradles did better work. If you have not tried drafting around 16 or 17 you do not know whether it helped you or not.

The second topic for discussion is waste on opening, pickers and cards. We have several subdivisions under that: (a) Waste of each kind taken out at each machine in opening line. (b) Waste taken out at each section of pickers, giving type of beater in each section. (c) Waste of each kind at cards. (d) Do you have a waste-control program?

Mr. D: We have had the new Saco-Lowell opening and picking and mostly Saco-Lowell equipment in our card room running approximately two years. A few months ago we made some tests to see how oil would affect us in taking out waste in the card room. We are running middling gray cotton, 1 1/16-inch. As you know, that is pretty dirty; and we hope this new machine can clean that up. Our oil is Form 35 mineral oil, and we are putting that in at the vertical opener, 0.30 per cent. We have a No. 7 blending feeder, and are taking out dirt and fine lint there, about 0.26 per cent. We have two different types of air filters, a No. 7 and a No. 6. On the No. 7 we are taking out 0.18 per cent of

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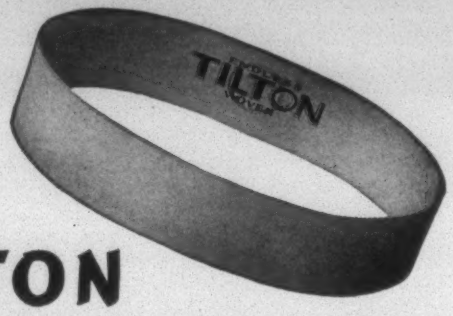

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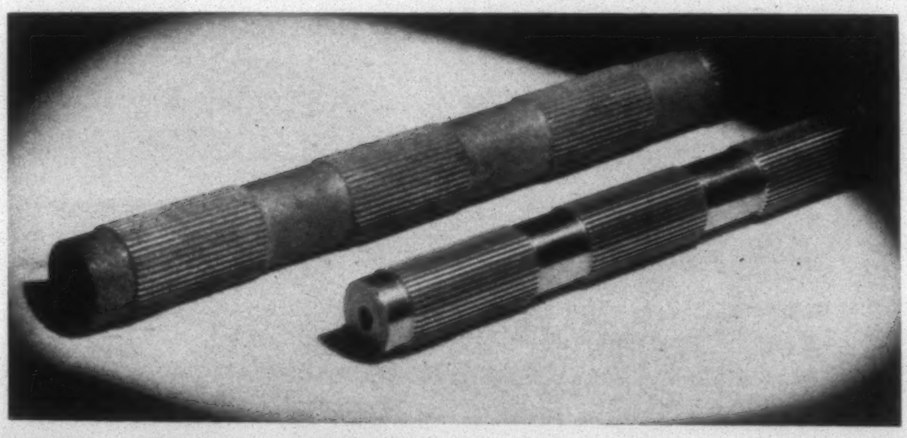

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waste, which is small lint and dust, and on the No. 6, 0.33 per cent, dust in bags and sheet form, mostly fine lint and dust. There are no motes or anything like that; it is fine lint and dust that accumulates inside the bag. That is taken out by the air filter. In our vertical opener we are taking out 0.50 per cent, which is motes and dirt. That is the first machine in which we are taking out dirt. We have two No. 12 lattice openers. In the first one we take out 0.62 per cent of waste, which is motes and dirt. Then the cotton goes through a No. 6 air filter and then to the second lattice opener, which takes out about 0.50 per cent, motes and dirt and leaf. That waste is like our picker waste; it is a little finer than we take out on the pickers. The percentage of picker waste is 0.94 per cent—motes, dirt, leaf and heavy particles. That takes care of the opening, and so far we have taken out about 3.33 per cent of waste, as far as we have gone. The grade of cotton is middling gray, $1\frac{1}{16}$-inch, and our opening is $2\frac{1}{16}$. The dust we take out is practically the same as dust-hole waste.

Mr. E: We are in the process now of revamping our opening equipment and our pickers, and we have not gone into the matter of how much we get out at each process because we have not completed it. On the pickers it is running roughly, with the Whitin picker (although we have not completed it), about 0.75 per cent. That is motes and immature fibers. The machines we have are first, a Whitin hopper, then a vertical opener, then a No. 12, then through the Whitin line. We have our lines split, with four hoppers feeding four pickers. We have our Superior cleaner in with the opening line.

Chairman: We have ours in the opening line, as Mr. E has. We have all the cleaning equipment in the same room, and from the feeders the cotton is sent over to the condenser. From the condenser it goes over to the Superior cleaner, so we might say that the Superior cleaner is the first cleaning machine after the feeder.

Mr. E: We were running bright strict low middling cotton, and our total waste came to 2.334 per cent, through the cleaning. On our No. 7 feeders the percentage of waste removed is 0.240, dust and lint. From there it comes to the conveyor and is brought to a condenser, and then after that it comes to the Superior cleaner. On that the percentage of waste is 0.34. That is a place where it is not cleaned by air. Most of our heavy leaf and that sort of stuff is collected there. From there it goes to a vertical opener, where the percentage is 0.782, motes, etc. From there it goes to a No. 12 Buckley beater section and then to a second Buckley beater section and from there to the breaker beater section of the picker. On the two Buckley beater sections the percentages are 0.653 and 0.319, and leaf and heavy motes are removed. As I said, our total waste through the cleaning is 2.334 per cent.

Chairman: From the contacts that you have, does that sound about right for middling and strict low middling? Does it sound like pretty good cleaning, or is it bad?

Mr. G: That is pretty good beating. You do a lot of beating at the card. I do think the quality of your cotton is determined after the opening stage. This is where you sort of shape the character, as it were. You have to get them young in this business. You can part-way tangle these fibers, and you can do that in the hopper or breaker picker such as we have. That continual tumbling will curl or break up these fibers. That may not show until you get them on the card. You can pass cotton through the picker one time and spin some of it into yarn, and you can put part of your sample through a second time and spin it into yarn; and you can tell the difference. There must be a number of times that it is put through that counts. I think the control is the keynote there. In other words, we can not suck or blow it through, because that alone will tangle the fibers into neps or these repulsive balls that we have. If you are going to open up and clean the cotton you might as well face it; you have to do it early, and it is going to take severe treatment. There is no use in passing it through twelve or fourteen treatments; you are just going to tangle it up. Opening machines are going to have to be re-designed, I think, because if you pass your cotton through this series of units and take out 2.5 per cent that is not quite enough.

Mr. B: Our pickers have two beaters; the first is a three-blade beater, and the second is a Kirshner beater. The first revolves around 1,250, and the second around 1,100. Our total waste is around one per cent that we are taking out on that picker, mostly heavy leaf, etc. Our grid bars on the first picker are open between a half and three-fourths inch, gradually, of course, opening more with rotation of the beater; and on the Kirshner beater the grid bars are open from ⅜ths to ⅞ths, varying there again with the rotation of the beater. So it looks as if we are taking out about one per cent there, Mr. Chairman. One is a two-blade beater, and one is a three-blade Kirshner beater.

Mr. F: On the breaker section we get 0.296 per cent. We have another small beater that carries it up to the blending reserve box, and that collects a lot of fine lint such as you get on the feeders. That is 0.083 per cent. On our Kirschner beater of the finisher beater section we got 0.172 per cent, or a total of 0.551 per cent on our pickers. That is a little less than Mr. Williams has. Sometimes we found some motes at the breaker, but normally that is not the case.

Mr. H: We are taking out a little more on the picker than the other two gentlemen here have mentioned, which is probably due, I think, to the fact that we have cut down some on our opening equipment. We are not feeding as much as we formerly did, and we are running about 1.2 per cent on our pickers. We are also projecting around with two beaters or three beaters and have reached the conclusion, I think, that two beaters are enough at the picker. I am not sure that any of us have any figures. I can not give any figures other than that, but I think we are taking out about 1.2 per cent on the pickers.

Chairman: It seems that the percentage of waste through the pickers, from what information we have received, runs somewhere around three to 3.5 per cent. I wonder if that is true every year or true just on the type of cotton we are getting this year.

Mr. I: We think we take out too much, but the overseer of spinning says we do not take out enough. So we have to get a happy medium. We are not on middling cotton. We take out considerably more waste.

Chairman: Question "c" under this topic is about the waste of each kind at the cards.

Mr. D: So far as we have gone, taking the waste at the pickers, 3.33 per cent, and counting the invisible waste after the pickers, 0.16 per cent, it is practically exactly what you said—3.5 per cent. Then at the card we found the cylinder strippings were 0.82 per cent, the flat strippings 3.34 per cent, motes and fly 1.27 per cent, scavenger waste 0.05 per cent, and sweepings 0.20 per cent. That last was invisible loss which we found by sweeping around the cards. That is a total of 5.65 per cent at the cards. It varies, of course, with the speed of the cards and the setting. That brings the total of all waste up to 8.98 per cent exactly; waste that we could actually see, that we could sweep up or count; and there was about one per cent of invisible waste. That makes it 9.89 per cent, or very nearly ten per cent through the cards.

Mr. G: You say your flat strippings are 3.34 per cent—I was wondering what the flat speed was.

Mr. D: 3.5 inches per minute. We have as much waste there as we have with your opening and picking.

Mr. G: We think if you go to nine inches a minute you would get no more than you would at six inches or at 3.5 inches. The amount of waste on each flat at nine inches or at six would be no greater than at 3.5 inches. The wires have a certain ability to hold fiber, and that is all there is. It makes no difference whether you run nine inches or six inches. If you take your flats off you will find that on the first two strips you have taken off about 75 per cent of the total strips that you would have. So what that means is that these hungry flats, as they come into contact with the cylinder, pick up good cotton enough to serve as a cushion on the wires; and after that they become selective and pick out dirt and motes. If you pull it off you can see that; there is a layer of fibers on there, underneath. You may as well be pushing dirt into there as fiber, by slowing down the speed.

Mr. J: We found that with the higher speed we got a lighter flat strip. We did not get any more dirt. With the slower flat speed we got a heavier strip, which showed up to have some dirt and trash in it. Therefore we found that 3.5 inches was the best speed for our condition.

Mr. G: The amount of waste is about the same regardless of the flat speed. These wires hold so much waste, and that is all. By slowing it down I believe you will pick out more dirt or more of these tangled things that stick to the wires and flats than you will at higher speed, and that is what you want. Instead of getting good cotton in there you are getting these things that you want to take out. I do not say better carding but less waste. It does not affect the carding quality much.

Mr. F: Our figures, again, are very similar to those of Mr. D;

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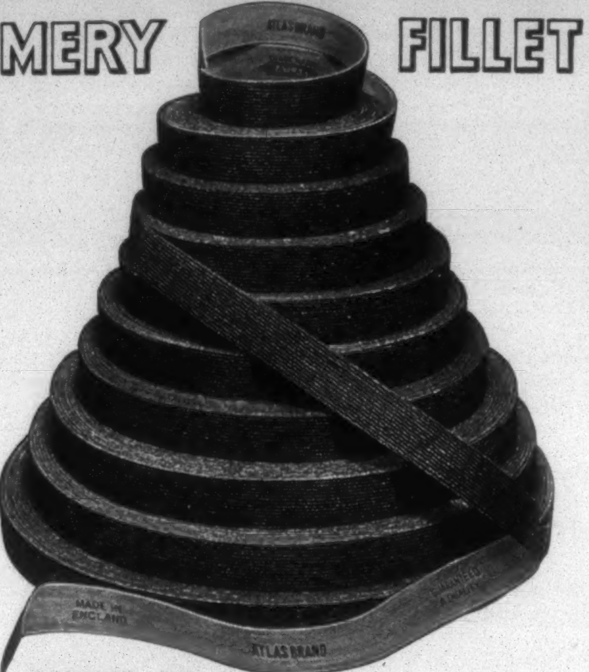

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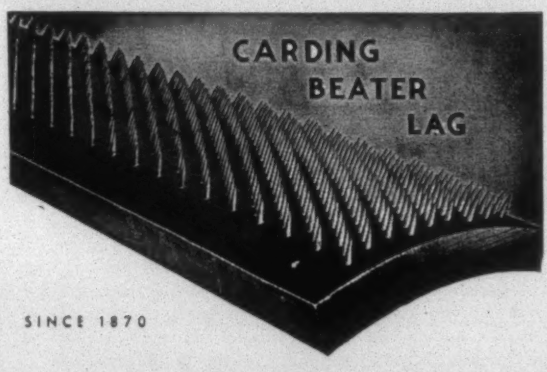

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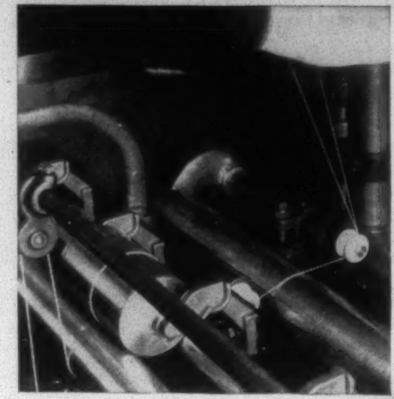

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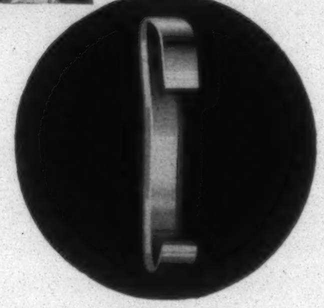

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on flat strips the percentage was 2.937; cylinder and doffer strips, 0.687; card fly and motes, 1.176. That is a total of 4.8 per cent. We were not able to do more than estimate our invisible waste, and we figured it at 0.15. The total through the cleaning, pickers and cards is about 7.9 per cent.

Mr. K: The total waste on our cards is slightly smaller than what this gentleman said. He said his was around 5.65 per cent, and ours runs right around five per cent. We run middling cotton. And I should like to agree with what was said about slow speed on cards. If you will take your flats off after ten minutes I think you will find as much on there as you do after running for some time. If all it does is collect fiber, why have it on there? I imagine there will be a lot of argument on that.

Chairman: The last question under this heading is "Do you have a waste-control program?"

Mr. D: In our opening room the overseer goes down once a day and checks the amount of waste and the type of waste we are getting off each one of the machines. On every clean-out period, which is once every eight hours, he checks the pickers to see what type of waste they are getting out. Then, of course, on all the machines he checks to see if they are getting spinnable fibers in the waste. After a card is ground we let it run for 24 hours and then go back to that card and check the waste we get off with the flat. We have a standard there of 16 grains of waste that we want to take out with the flats. As for reclaimed waste, each of our doffer tenders tries to keep the reclaimed waste down to 100 pounds per shift.

Mr. F: Our figures, again, are very similar to those of Mr. D. We do not keep any records or forms except on the reclaimed waste. Each card tender keeps his waste, and at the end of the day we have a man who goes around with a portable scale and checks the waste. When we started off we took our best men, men we knew were good card tenders, and we found that if they had 30 to 35 pounds they were doing pretty well. So we tried to hold our waste within those limits, and we check each man's waste daily to see if he is within them. If anyone exceeds the limit too greatly we check to find the reason for it. We do the same thing with the drawing tender. Of course, very often if a drawing tender has an excess he claims that the card tender is giving him singles or something like that. So then we check on the card tender. If we find that the drawing tender has a little too much waste, and he claims it is due to the previous process, we check that. Sometimes there will be a can of waste around that nobody made, but that doesn't happen so often.

Mr. L: Last February Mr. K did select me to set up a waste-control program in the mill. We have daily and weekly records and then a monthly report that is going to each department head. All of our waste is carefully weighed daily and put in one central place and baled up. We can tell exactly who is making it and how and where it is made. Also, as to the seconds, we try to keep up with the seconds and where they can be utilized, in order to keep down the amount of waste we have. All our waste is classified on each process and a goal is set up for each one of them, all the way through to thread waste. We check each department every day, and if the amount of waste is up we try to find out why it is up, and if it is down we give them a pat on the back for that. Our opening and picking is being re-designed, and we have not done too much on that yet.

Mr. K: I guess we have one of the few Shirley analyzers in this country. When we get this waste-control program straightened are doing. As Mr. L told you, we are just going through our openare doing. As Mr. E told you, we are just going through our opening room, and we shall go on through the pickers and the cards.

Mr. M: We try to stay within certain limits. But when you go to considering reworked waste and say too much about it to the card attendant and the drawing hand they go to letting those ends from the lap run through the card, and you make more waste further on by letting that go in and you get more uneven waste than you would by taking it off there and letting it go back through. So when you talk about reworked waste you have to consider all those angles. I should like to ask how much waste ought to be taken off the lap when the card tender is lapping the lap. I wish some of you would tell me how much ought to come off there. You know that when you start your pickers you have unevenness there, for the simple fact that when you stop the pickers all that cotton is blown up, and it has to come through. I should like to ask you how much ought to come off there. I should like also to ask this question. We have the new drawing, five-roll Saco-Lowell. We try to make the lap as smooth as possible, but we find even at that when it runs off the spool we have a draft there between that roll and the back roll. So when the lap leaves the spool you have unevenness there, and if the end is not placed as it ought to be on the spool you have a whole lot of unevenness. Just recently I got after my drawing hands for taking the end off the back because it looked uneven, but when I got to sizing that sliver on the front I was surprised to find out how uneven it was and how much I had to take off to get my sliver down to the number of grains it ought to be. We have to depend on this draw frame attendant. Can you tell me how much you would take off? We have no way of weighing it there to see if it is right. How much do you think we ought to take off there at those rolls? I have weighed this sliver on the drawing after the man had taken some off, and it seemed to be all right, but I had to reel off seven yards before I could get back to my standard of weight. We have to watch that. I want to know if you have any way of taking it off at the lap machine in the front, at the can. What we do is clean the machine and take off some there. Then the drawing attendant has to take off some to get it down to the right weight for the sliver.

Chairman: Our next topic is a discussion of the pneumatic rack release on the picker, and there are three questions: "(a) Give its advantages and disadvantages; (b) Has it enabled you to show an improvement in lap evenness, yard per yard?; (c) Has it eliminated or reduced the customary yard or two of heavy lap on the start-up at the picker?" That is something new on the Saco-Lowell picker.

Mr. F: It works by compressed air. There is a piston there, in a cylinder, enclosed air will operate that piston up or down. That in turn has effect on the shaft and will raise or lower it. As you press it in gear one line is open and the other closed. When the picker indicates open it operates and controls the flow of air. That is about all it is. When you see it in operation it is a simple operation and you wonder why it was not done long ago, but when you try to describe it it is hard to do.

Chairman: As Mr. F said, is is a cylinder that has a piston in it, and as the piston works it raises or lowers the loggerheads. As the lap is running and winding up the pressure is on the loggerhead, raising it up. If your pressure is set at 42 you have 42 pounds of pressure in there at all times. The air gradually comes out until the machine knocks off. When the machine knocks off, the up line going into the top releases and lets the air out, to force the piston all the way up. When it does that it raises the loggerheads. It is all automatic. When you get ready to start the machine you press the hold and the loggerhead will go automatically right straight down and catch the pin, and the pin starts winding. When the lap goes through the machine knocks off, and that rack-release motion hits that same foot pedal automatically, and when it hits that foot pedal it lets the loggerheads run up to the top. The man does not have to do it. That is the way it works. The parts come off; practically everything comes off the machine. The mechanical friction comes off, the pedals, the foot brake, the big hand wheel on the side, all come off. You have a cylinder of oil under there that is tied into the air line, and every time this machine trips or knocks off it will shoot many drops of oil into the air line, and that is automatically carried along with the air into the cylinder. In that way you keep the cylinder lubricated all the time.

I would not say the evenness yard per yard is improved by the pneumatic rack release. That is due to the condition of the picker. I should like to go further and say, and I believe the others will bear me out, that with the pneumatic rack release we do have a better end to the lap. It runs the same all the way out to the end. We made some charts showing the evenness per yard of a lap made on a picker with the pneumatic rack release and of one made on an old picker with the friction release. The point is that our evenness per yard is O. K. in both cases. We do find that the biggest advantage of the pneumatic release is evenness in the lap, and tests show that the lap is not stretched. The friction type did the same thing and did not stretch it but made a bad ending to the lap. The pneumatic rack release is a good thing, in my opinion, because you have a good, firm package all the way to the end. It is a uniform package. That lap weighed 53 pounds and eight ounces and was 54.75 yards long and had a diameter of 16¼ inches. The lap that was made on the friction machine weighed only 45 pounds, had a diameter of 17¾ inches and was 54 yards long. The difference between the two laps comes down to the point that the lap is firm from beginning to end. On account

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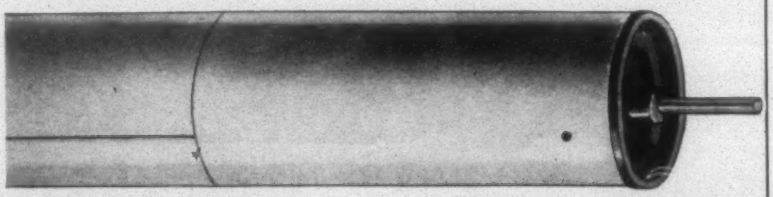

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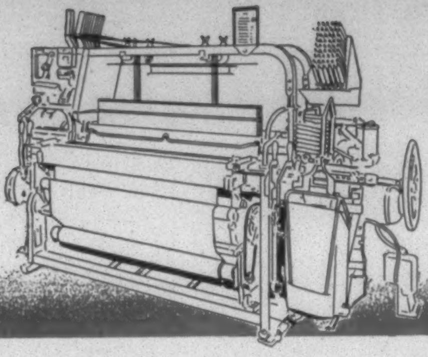
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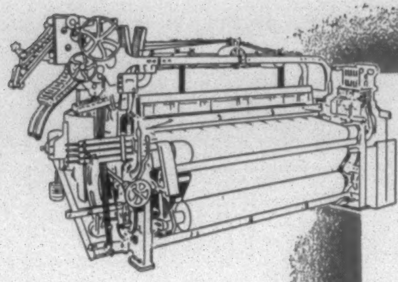
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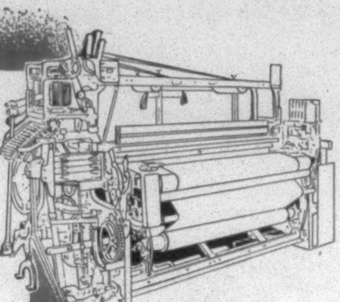
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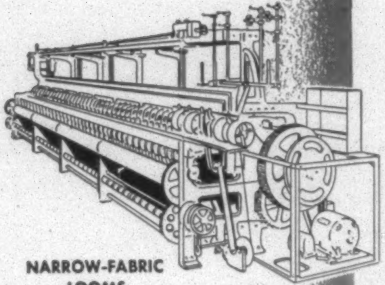
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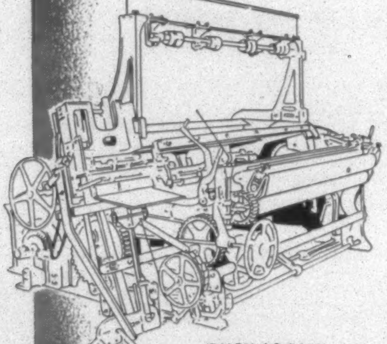
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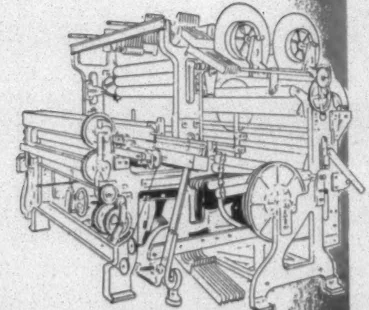
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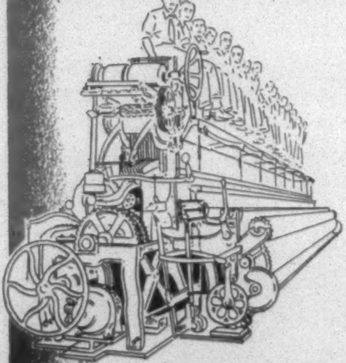
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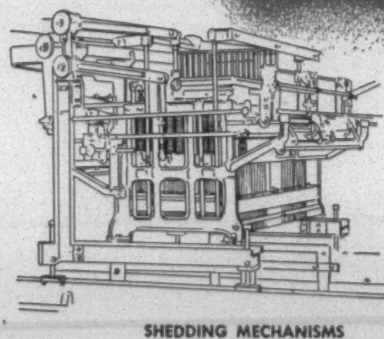
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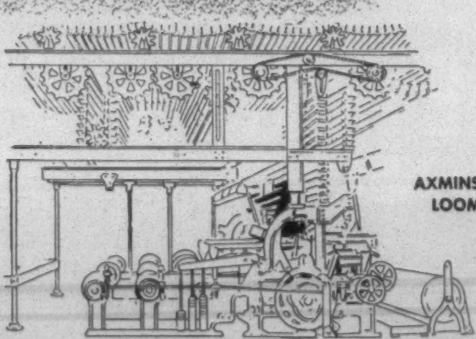
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of this even friction throughout the lap you have fewer laps to lay on the card and have run another time. We increased, to see how far we could go, and on this test made a 53½-pound lap which was 16¼ inches in diameter. Before we used the automatic rack release we did not change our length, and we made a 48½-pound lap that was 50 yards long. But we were unable to put this on and make a 53½-pound lap, and still the diameter of that new lap is not as large as that of the old lap made on the friction release.

Chairman: We come to the last question: "Give your experience with the new electronic type evenness testers for testing sliver, roving and yarn."

Mr. N: We have one and gotten very good results with it. I am not trying to sell any one type of tester. There are others on the market. I believe most of you who have this type of tester will agree with me that the electronic type is the most versatile one you can use. In other words, with it you can test anything from the sliver up to the yarn. I have heard that one is being put out that will test laps also. Our biggest use of it is from the drawing up to the yarn, for finding defects not visible to the eye. I am not prepared to give out any figures on that, but we think we are getting pretty good results. It is strictly an evenness tester for yarn or roving.

Warp Preparation & Weaving

Loom Cleaning Information Exchanged At Eastern Carolina S.T.A. Meeting

THE weaving discussion at Durham, N. C., this Fall conducted as part of the regular meeting of the Eastern Carolina Division, Southern Textile Association, was led by J. E. Shaw, assistant superintendent of Rosemary Mfg. Co., Roanoke Rapids, N. C. The program concentrated mainly on weave room cleaning. Introductory remarks on this particular subject were made by E. Forrest Kulp of Charlotte, N. C., district manager for American Monorail Co.; an abstract of the information presented by Mr. Kulp, and the ensuing floor discussion, follow herewith.

Mr. Kulp: We got started in the process of automatic cleaning of looms about 2 or 2½ years ago on invitation from several different mills who were interested in cutting out the high cost of hand cleaning. We started off with various types of equipment, starting off mainly with what we already had at our hand, our regular spinning cleaning equipment. After we worked with that for a while it soon developed that our standard spinning frame cleaner unit was not adopted to loom cleaning because it aggravated the condition in the weave room rather than relieved it.

We started designing some new equipment we though might do the job better and our trials got started first in the spun rayon field. It seems that the spun rayon cloth as a rule is more expensive type of cloth, grease and other imperfections in the cloth cause more damage, are more expensive to get out and in lots of cases couldn't be gotten out and for that reason the rayon weaving mills were spending a lot of money to clean the looms by hand. They found the money well spent, because it increased efficiency of the weave room enough to pay for the increased labor cost of cleaning looms. Then we got into cotton and the situation is different. We have your carded cotton and combed cotton and from what I am able to learn, spun rayon shedding in the loom amounts to about 2½ per cent, combed cotton weaving 2½, carded cotton shedding reduced 2½ to one per cent. We have a lot less bulk lint than we have in either combed or spun rayon. Along with that usually the carded cotton cloth is a lower priced cloth than combed cotton or spun rayon and the damage in the cloth is not as expensive to the mill.

We are now working on cleaning combed cotton, have not tried carded cotton though we hope to start in the near future. I can tell you what we have done in spun rayon and combed cotton is very nearly alike. The unit that we have developed is a unit similar to our automatic cleaning over spinning in that it travels on a closed track over the center of the looms. We have used two 1½-h.p. motors with 26 r.p.m., with a pipe on each specially designed hosing and nozzle to throw a fine stream of air about with high velocity. A low velocity of air causes a disturbance and spins lint all over the room. In other words we have something on the order of compressed air line. We are blowing clean air other than air partly saturated with oil and water.

The unit has two nozzles (one from each fan), not in fixed position, closing down over two parts of the loom at one place, making one complete revolution, changing position and hitting another part of the loom. There again we had to keep down the big blast of air in order to hit all parts of the loom—had to change position in order to do it. The way we are operating now is at a speed of 200 feet a minute. That might sound high when you are used to speeds of 100 and 150 feet a minute for automatic cleaning. We are getting good results as far as stability of the unit and use on the looms. We have the unit built so that the nozzle can be adjusted to hit four different positions on the loom each time it goes around. The drop wire will not stand too much air from a traveling unit because the air tends to push them along. We have to get the right amount of air to keep them clean without dropping them off and stopping the loom.

Another thing is the intake through the center of the fan. We have different intake plates that can be changed within a matter of a few minutes. We always give different size nozzles that we attach to the hosing. One nozzle lets it spread out more and another nozzle confines it to a more limited space on the loom. With those adjustments we are able to meet any of the conditions we run into so far. We find that on beams that are running an average of 12 days, we can eliminate all blowing off of drop wires and arches, the cams, end of the loom, around the motors and things like that between warp changes. That has been the expense of cleaning looms, that daily stopping off of looms, brushing off arches and harnesses and ends of the looms, removing the cloth and blowing out the drop wires and picking out oil saturated lint distributed around the wire.

Combed cotton warps that run a matter of about three weeks would average 19 days in the loom. That gives a longer time for the lint to build up on drop wires and cams and straps and we cannot let the thing run that long without cleaning off by hand. It does look to me that in a lot of carded cotton beams run a short length of time due to the nature of the cloth. The beams run a short length of time and for that reason there is less time for lint to build up between warp changes. If you clean out all the lint from underneath the loom and lubricate and get it ready for a clean start, if that is done rather frequently where your beams run a short time, we believe we might be able to keep the lint off between changes.

The cost of installing the equipment is, of course, the main thing, whether it will be feasible or not if it does the work. As a round figure we take 55 hours per loom as cost of installation. You can arrive at your own figures—whether it would be worth anything to you or not in your mills, by taking the present expenditure you are laying out now for hand cleaning, allowing a certain amount for continued hand cleaning, applying the rest of that savings toward the cost of equipment. At one mill on spun rayon they made a very detailed analysis for us and they came out with a figure of 30.4 per cent return on the investment. That was strictly labor saving; as what it does to quality of the products we don't have any complete figures. It does look like it will improve the cloth but from what I have seen in the weave room I wouldn't believe anything I say until they average up two years. I don't know of anything I can tell you offhand like this.

Mr. A: Do you use the same unit in overhead cleaning?

Mr. Kulp: Yes, what we do is put the big 20-inch high-velocity ceiling fan in the same unit to blow down the overhead.

Member: Is that saving included in the figures?

Mr. Kulp: Yes, we are taking the entire course of blowing off the looms daily, including drop wires, taking 25 per cent of the overhead cleaning cost and about ten per cent of the floor cleaning costs to apply toward purchase of equipment. The reason we can save on floor cleaning is because the cleaner keeps the floor clean between the looms and floor sweeping becomes a matter of sweeping down the aisles. That would make it easier and might give a man a little more time for other duties.

Chairman: How about cleaning underneath the loom? How much cleaning will your overhead cleaning do as far as the floor is concerned?

Mr. Kulp: About the floor, if anything, it makes a floor condition a little bit worse under the loom, tends to pack it up underneath the loom. Underneath the looms the lint rolls up and builds up deeper than without the cleaning.

Mr. D: In order to create a strong enough wind velocity to remove lint I was wondering what effect that would have on electric stop-motion, if any?

Mr. Kulp: We can't put a full blast of air directly on the drop wires because as the unit moves along it would push them over until they made contact and stopped the loom. We have set it up so the fringe of the blast hits the drop wires, one from one side and one from the other side, and keeps them clean without stopping them off, adjusted by trial and error after the unit is installed.

Mr. E: What cleaning does it do as to the rods and harness?

Mr. Kulp: It doesn't keep them clean. It keeps the loose lint off them and if the mill frames are in good condition keeps them in pretty good shape; in between heddles it builds up somewhat.

Mr. E: Does it have a tendency to build up lint deposit in the lower part?

Mr. Kulp: I would say it doesn't make that any worse than it does without automatic cleaning. Mills are leaving harnesses alone and not cleaning them from one warp change to another.

Mr. E: In a plant where the warp is not changed, where you have continuous tying back, would the benefits ~~be~~ as great as where the warp was removed from the harness?

E. F. Culp *(standing)* speaks on loom cleaning to the Eastern Carolina Division of the Southern Textile Association. *Seated* is J. E. Shaw, who led the weaving discussion.

Mr. Kulp: When you tie in a new warp you take the beam out and of course make the underneath part of the loom accessible for cleaning; at that time you can brush off the heddles same as you would if you didn't have overhead cleaning. It all depends on the degree of cleaning you do. As I see it, it doesn't make much difference whether you change the entire warp or harness or whether you tie the warp on the loom.

Chairman: How about when you have some type of rail system overhead for moving your beams down the alley; how about the height?

Mr. Kulp: If we have room we put the automatic cleaning job above the bridges. It just requires a different adjustment. In regard to horsepower for the weave room air, we are using now 4¼-h.p. per unit; if we can cover 90 looms that would give you about the horsepower requirements. I don't think in relation to the total horsepower in a weave room that the unit would make a big load on the weave room.

Chairman: On Section 2 we have loom cleaning. The first question is "When do you clean looms now?"

Mr. E: We use the compressed air method and the cycle is 48 hours. We have continuous tying; we don't remove our harness or our pattern from the loom. We cover it every 48 hours with half a section one day and half the next. That is distributed over the shifts and each man is given roughly 100 to 125 looms and he blows off half of those in eight hours; the next day he blows the other half which gives a 48-hour cycle for three-shift operation. That cycle would, of course, be tied into the operation, whatever it happened to be. There is no stoppage except when the front part of the loom is blown off (such as blowing off around the filling fork). Here there is a possibility of lint being blown into the shed and woven into the shed. All of the back part of the loom is blown with compressed hose line. The air pressure at the hose nozzle is about 60 pounds.

Mr. B: We have 24 looms out on a platform and have used commercial softener and have painted the loom with commercial softener, then taken a steam jet and tried to clean them, then we did a very good job. But that probably cost us four or five dollars a loom. When you put them back in the loom, you have humidity, you have starch, you have lint and in six months they are as bad as they were before and it is a very serious question as to whether we don't do too much loom cleaning. It might be better that we didn't clean only when the warp came out and wipe the loom on the sides rather than use a brush or compressed air. On our combed broadcloth we have used compressed air for two years and finally gave up because we couldn't do it and keep our cloth clean. I am convinced you can do too much cleaning sometimes.

Chairman: Don't you think along that line that the amount of cleaning necessary would depend to a large extent on the type of goods you happen to be making? I can see where a fancy dress goods mill should do more cleaning than one making denim.

Mr. D: We have a loom cleaner, a special job, which goes over all our looms once every shift. We are using compressed air, 50 to 60-pound pressure. That has been going on now for two years and over this period of time our looms are gradually becoming more and more contaminated with lint and grease and, of course, when the warp is out we go over the loom much more thoroughly and give it a good blowing off at that time. We are of the impression now that even though we are spending a great deal of money having them blown off once each shift that we aren't keeping our looms as clean as they should be kept. At the present time we are putting on a program where we use cleaning solvent when the warp is out and go in and wipe the looms off and brush them and give them a thorough cleaning at that time and then by going over them every day, by blowing them, we find we are keeping them much cleaner. To do a thorough job it takes about 45 minutes or an hour.

Chairman: I believe you said you have experimented both ways—use of compressed air, mopping and what not, with and without your solvent. You find you are getting a much cleaner job by the use of a solvent; do you apply this solvent by spray?

Mr. D: We tried spraying and we find that we like the method of mopping it on better; it doesn't make quite as big a mess as usually does spraying. Take a mop and mop all around and then sometimes you have to take a rag and go over and get that grease off but after you get through you really have done a thorough job and have a clean loom; by blowing once each shift you are able to keep them clean. That cuts down our grease and oil and seconds have dropped considerably. We don't intend to do this as a regular

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thing. We are going over these looms thoroughly and have them cleaned once and continue to blow them off each shift and possibly won't give them another thorough cleaning for another one or two years. This is a new experiment. We want to see how long we are able to keep them clean by blowing. Of course when they get filled with grease and lint again then we will have to give them another thorough cleaning.

Chairman: You say that it took approximately 45 minutes to thoroughly clean the loom; thus the down time on that loom is 45 minutes more than it was before. I would assume that the down time on that loom for tying in a warp and getting it started up you would have an hour and 15 minutes to an hour and a half?

Mr. D: Something like that, it runs into an expensive proposition but it all goes back to if you want clean looms. If you want them clean that is the only way we have been able to get them clean. We found it to be financially justifiable and it cuts down the fire hazard.

Mr. E: We assign one person to clean all filling forks. Instead of having it broken down to so many individuals one person is responsible for those and the weaver is relieved of that duty.

Mr. D: We have our loom fixer go over the filling forks and clean them out once each shift.

Mr. B: Our weavers are given a brush and clean their own filling forks.

Mr. H: I would like to ask if anybody has tried to fasten a stationary brush on the loom and as the lay travels back and forth hits it and keeps it clean. I have heard of that and wondered if anybody has tried it.

Mr. D: We have two looms on which we are experimenting with those brushes now and as the lay goes back it hits the brush and that tends to clean the lint out but we haven't come to any definite decision on that as yet.

Chairman: I haven't heard anything said about the oiling program along with the cleaning. I thought when the warp is out the loom should be given a thorough oiling. Would somebody volunteer to tell me what his schedule is on oiling.

Mr. H: We grease and oil it when the warp is out. Two or three weeks ago I caught it about the time they cut the warp out and I thought I would see how much time it took and from the time the loom cleaner got on it and cleaned it up and the oiler got up and greased and oiled it and they had it back in 35 minutes. Those operators are on piece rate; the loom cleaner was waiting on the loom and the loom fixer was ready so they got it right out.

Mr. E: I have tried cleaning on the third shift and I find that there is quite a bit of production loss on those looms when the first shift reports to work the next morning. Removing lint from the beam, the shed, the harness and the other parts is a very good way to get a bunch of dissatisfied weavers because usually the ones assigned to the blowing off don't have sufficient knowledge of how clean that loom should be to have it ready to start back up.

Mr. E: I have at one time had an entire weaving section equipped with that stationary brush. At the present time I have quite a few of those brushes on and the brush was designed by a brush engineer, if you call him that, and specially made and it does a good job. There is a possibility of it being moved out of adjustment and it requires constant observation. We are using a nylon brush which is very satisfactory, doesn't have the tendency to load up and tangle up as an ordinary bristle brush would. It does have a tendency to push lint to the front of the fork, does the cleaning from the back side of the fork. It will keep any heavy deposit from building up but still needs periodic cleaning.

Chairman: Mr. D, do you stop off the adjacent loom when you are giving this over-all cleaning to the loom when the warp is out?

Mr. D: No. We quit using a spray and started mopping on account of spraying the adjacent loom. We only had one loom stopped when the rest of the looms were running. In blowing off we do not stop the looms off all at one time.

Chairman: Do you feel like it would be necessary to stop off the adjacent loom if you were not using a solvent of some type and only blowing?

Mr. D: No, it would not be necessary to stop off any looms.

Mr. Kulp: Has anybody tried vacuum cleaning on looms?

Chairman: Don't you think the biggest problem is getting enough vacuum to do a good job?

Mr. E: The main trouble has been that it draws the lint through the warp and various parts of the loom and it just adheres to the warp threads; also the unit is not flexible enough to reach the parts that need to be reached. We had a 6½-horsepower unit.

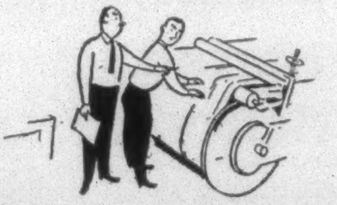
Chairman: We move to overhauling. Do you have a regular overhauling period or method for loom maintenance?

Mr. D: In our overhauling we do not have a regular overhauling crew. We leave our overhauling up to our loom fixers. Each loom fixer is assigned so many looms, 30 in our case, where he is responsible and in his daily routine he overhauls his looms, keeps them in good shape. They are responsible for the loom entirely as mechanical work is concerned, crankshafts, etc.

Mr. B: We have a head loom fixer and he helps fix bigger breakdowns by taking out headgear or changing crankshafts, does some checking behind the loom fixer. It seems to me like the bigger jobs could be well turned over to the head fixer, like changing head gears, so he could get that in operation. If you use a loom 15 years the loom will run, but you are getting to the point where you have to do some work on it. Maybe the crankshaft boxes and crankshafts have to be changed and head gears have to be changed. How often do we get uneven cloth because we have worn parts? There is a time when if you have 500 or 1,000 looms you should begin at No. 1 and put a man there and say, "Let's take this loom and find out if we can't set it up again." There is a point when the loom should be put back in condition the way it was when it was bought.

Mr. K: We find even though the head fixer does assist fixers, he helps when the fixer would be tied up for a period of time; it speeds up the job, gets him to his other jobs quicker. Lots of times in our case parts or material have to be secured from supply room or shop; he does that for the fixer, keeping the fixer in the mill or on the job rather than going out for them himself. We find that he is just a part of the organization.

Chairman: I am sure all of you have loom fixers on your job and maybe one is not as proficient as the other. You can have 85 per cent who can run a section and you still have 15 who will need additional help. Don't you think that extra person more than pays for himself so far as the efficiency of your looms justifies?



Mr. E: In our case we call the head fixer an overhauler but he just assists in breakdown and changeovers and we have periodic checks that we put on different types of shafting when we find it necessary to remove bearings and have them rebushed, to remove shafts and turn them around. We take more or less a motion at the time and, to be frank, we usually do it when we begin to have trouble which, I believe, is what most of them do. When that particular motion or part of the loom begins to give trouble and you diagnose that as your trouble you go to work on it and assign it to your overhauler, breakdown man, spare fixer, head fixer, whatever term you designate. You assign him to assist in bringing this part of the loom back up to its standard performance. That has been my method, rather than take a loom and work it, as we say, from the floor up; we do it more or less by motions.

Mr. B: Our supply room is quite some distance from the weave room and you find your fixers off the job a good part of the time. Almost any time of day you see one or two fixers going to the supply room.

Mr. D: We are rather small. Our supply room is very conveniently located. Therefore, we do let our fixers go to the supply room after their parts although each fixer has a cupboard and in case of a picker stick or pickers they get more than one, usually keep a very small supply in that cupboard in order to cut down the trips to the supply room.

Chairman: You mention that word cupboard. I want to know how many supplies are lost in this cupboard. In our plant you can go in the weave room and you can find most anything you want—picker sticks, pickers, anything else. I don't know how much that is affecting our supply bill.

Mr. B: Each loom fixer in each section has a box for the three shifts. The boxes are supplied with shuttles, lug straps, binders or whatever is needed each week and charged out to that section every

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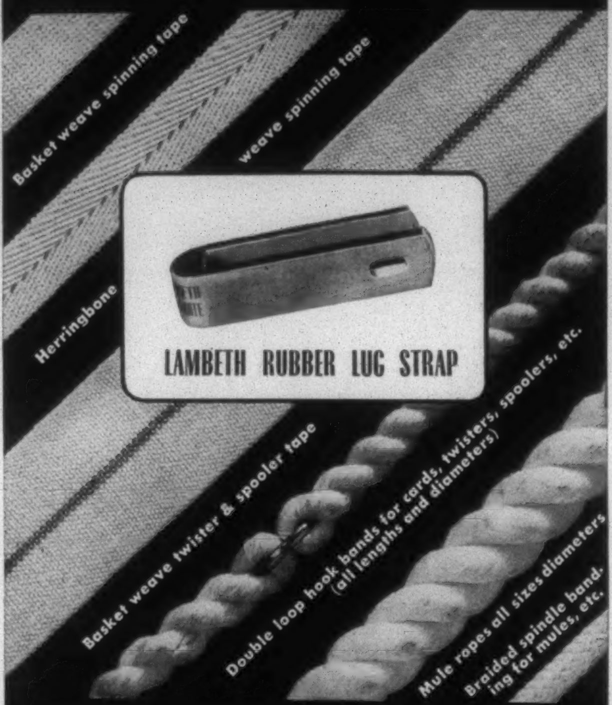
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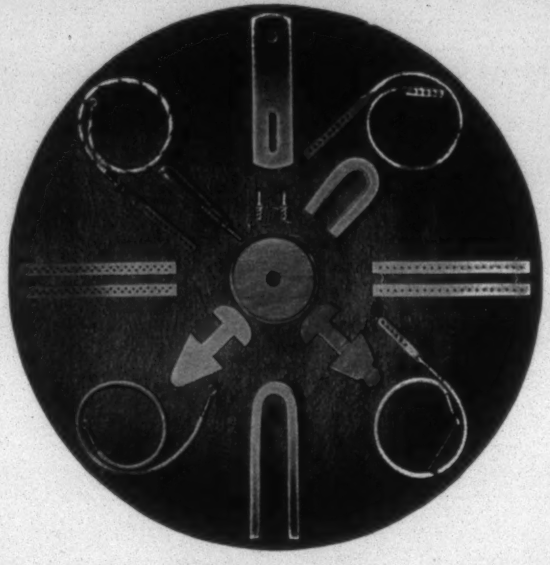

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week. The next week he goes again and replaces what has been taken away. That way you have charged it out to that particular section of three shifts. That, of course, cuts down going to the supply room. We did that rather than have a cupboard. With this method you do charge it to a particular section.

Mr. K: Ours is similar to Mr. B's. Our supply room being further away from the weave room than most mills this fixer will come to secure requisition for a part and we have a centrally located file and he will put his part underneath the file to be repaired. Then this supply runner, who is on the job continuously going back and forth, will pick it up, take it out and bring it back to the proper section. It comes back to that head fixer or some man in that capacity. We find it does save quite a bit of time in rebuilding parts or having things made or having to have alterations made, that he can do that or have it does for a number of fixers, possibly three or four at the same time, have only one out while another fixer is on the job.

Chairman: Speaking of loom fixers, I imagine most of us pay loom fixers by the hour. Is anybody paying by the pick?

Mr. D: Our weavers and battery fillers all are paid on picks, together with cleaning. Of course our breakdown is divided into parts, cleaning and production. We call them points and, of course, they are paid so many points for each operation and if they do all the elements, the job is broken down into elements. If they do all of these elements we add up the total number of points, then have a base rate we get their pay from. We have found it very satisfactory up to this point and we think it is working very well. We find the upkeep comes to less. The supply bill is less and production is up. All of them have been educated to the point that it is not only for their benefit but everybody's benefit as a whole to keep the looms in as good shape as possible, being able to keep them running.

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By FRANK D. HERRING

Part 19 – Fixing Looms

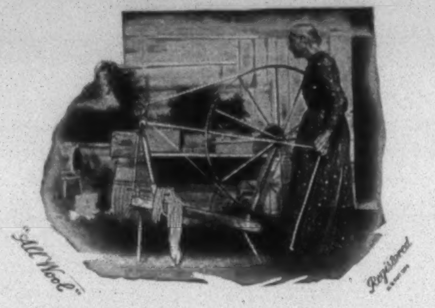
THERE is so much to be said on the subject of fixing looms that it is difficult to determine just where to begin in order to lay out an orderly plan of procedure to follow through to get the job done properly and permanently. Most people will agree that when a loom fixer goes to a loom, one that is giving trouble, and makes a few minor adjustments and leaves the loom running and making good cloth, that he has done a good job of loom fixing. I admit that could be true, but as a rule it is not literally true, because while making the adjustments that caused the loom to run, and apparently in good shape, he could have overlooked some part, or parts, out of adjustment, or loose, which might create a bigger job, and probably broken parts and more defective cloth. The above type of loom fixing is what we refer to as punching them over, making them go, but when one does this kind of fixing he is piling up unnecessary work for himself and the fixers on the other shifts, and at the same time lowering the efficiency of the output from the looms and increasing the supply cost for his section.

My experiences have convinced me that good loom fixing consists of the following methods and procedures. First, the loom fixer should have an adequate set of pocket tools, and an oil cup, and take them with him to every loom he works on. (Of course, there will be jobs to do when the pocket tools are not sufficient, and he will have to go to his work bench or tool box to do the job). He should determine what the loom is doing, or failing to do properly, before doing any work on it, and sometimes the trouble with the loom is not readily apparent, and in this event I think it is wise policy for the fixer to consult the weaver as to why the loom is flagged. After the trouble has been determined the fixer should have a *memorized* method of procedure to follow through to correct the trouble. When doing this he will not only remove the present trouble, and get the loom fixed, but will prevent future trouble and breakdowns and loom stoppages, and the use of unnecessary supplies. There will be some remote exceptions to the things which I will advocate. The loom might not run properly after doing all the things which I prescribe, but in a great majority of cases it will. But I still contend that it is good loom fixing on account of the many troubles it will prevent in the future. I think we should all bear in mind the fact that we never reach perfection in our work. If that were not true, progress in our line of work would cease.

Looms Slamming Off

We refer to a loom slamming off when it is stopped off abruptly on the forward movement of the lay by the protector rod daggers failing to clear the frog pieces, or steels. The things which can, and do, cause this to happen are too numerous to mention in detail, but the following procedure will correct this condition in a great majority of cases and at the same time get a lot of good preventive loom fixing done. Check the following things in the order mentioned. (When I say check, I mean to examine carefully, adjust, replace if necessary, and tighten securely.)

Remove the shuttle from the shuttle box and check the following parts: (1) The reed and back box plates. (2) The crank arms and the crank arm pins. (3) The frogs. (4) The back binders and front box plates. (5) The protector rods. (6) The protector rod fingers. (7) The crank and camshaft gears. (8) The crank and camshaft bearings. (Check the above mentioned parts on both ends of the looms, with the exception, of course, the crank and cam shaft gears). (9) Place the shuttle in the shuttle box and box it properly. (10) The picker and picker stick. (11) The parallel, parallel shoe and the parallel plug. (12) The pick shaft and the pick arm. (13) The height of the lug strap hanger or holder. (14) The check strap holder, the check strap friction bracket and the shuttle check. (15) The leather bumper. (16) Turn the lay until the pick ball rests on the highest point of the pick cam point and adjust the lug strap to obtain the desired stroke on the picker stick and tighten both lug straps securely. Turn the lay back slightly and check timing of pick. (17) Place the shuttle



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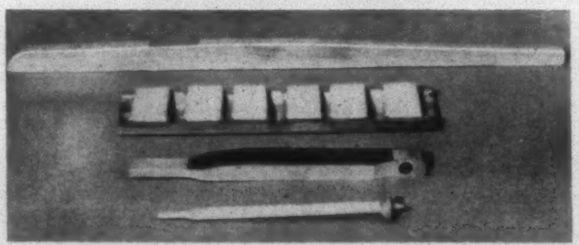

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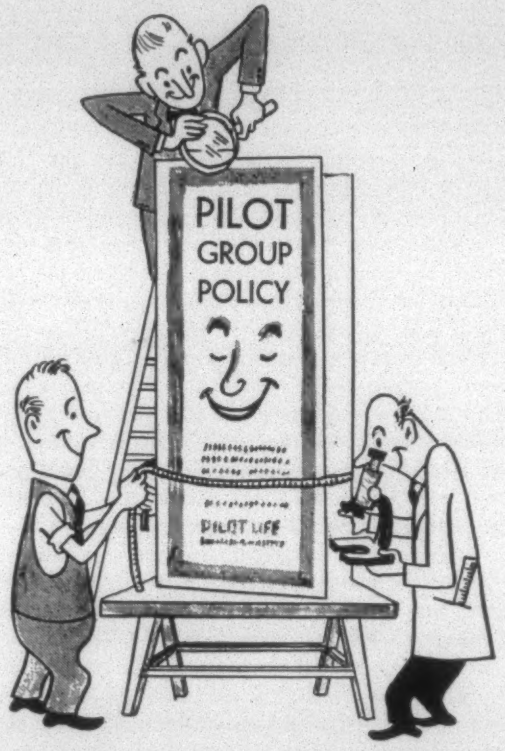

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in the opposite end of the loom and repeat the checks from ten through 17 on that end of the loom. (18) The tension on the cloth. (19) Harness setting and timing. (20) The belt if belt-driven; the friction parts if motor-driven.

The Reasons Why

The shuttle must be removed from the box before the following settings and adjustments can be made.

(1) When a new warp is tied onto the loom a different reed will be used. (The exception to this rule is when a portable tying-in machine is used to tie the warp yarn to the pattern without removing the pattern from the loom.) Sometimes the reed will have bent dents, or bent end pieces, and this will cause the shuttle to be deflected from its straight course of passage through the sheds from box to box. This will prevent the proper boxing of the shuttle and will cause the loom to slam off. And very often the reed will be found to be loose on account of the reed cap not being driven down sufficiently on top of the reed. This also will cause the above-mentioned trouble. The back box plates will sometimes be found loose and this will interfere with the passage of the shuttle. After tightening the back box plate it is wise to check to see if the cap screw, which holds the box in place, extends through the plate. If the screw is allowed to extend through and past the inside smooth surface of the plate it will interfere with the passage of the shuttle and will also damage the shuttle.

(2) The crank arms should not have any lost motion between the crankshaft and the crank arm pins, because this will prevent the smooth rotation of the lay and this will interfere with the straight passage of the shuttle. This lost motion is removed by adjusting the crank arm strap bolts. There is a lot of strain on the crank arm pins. They are eccentric in design and very often work loose; this will interfere with the smooth rotation of the lay and cause the loom to slam off. It will also cause numerous other troubles such as faulty transfer of the filling bobbin from the battery into the shuttle, sometimes resulting in broken bobbins, bursted shuttles, broken box plates, broken hopper stands, etc. In fact, it will prevent the proper functioning of the entire filling motion.

(3) The frogs should be in a fixed position at all times while the loom is in operation. They are held in place by the frog stops. Sometimes these stops will work loose or be positioned and tightened too far back and in either event the frogs will gradually work back too far and the protector rod dagger will not clear them in time, resulting in the loom slamming off. Sometimes lint will accumulate underneath the frog steels and raise them up too high and this also will prevent the clearance of them by the daggers.

(4) The back binders have a strip of leather on the inside which contacts the shuttle. They also have a small piece of leather on the back side which contacts the dagger finger. If either of these leathers are excessively worn it will prevent the shuttle from boxing properly, hence loom slam off. If the hole in the binder or the fibre bushing, or the binder stud are excessively worn they should be replaced, as any one of these things will cause the loom to slam off. The binder springs should be adjusted and tightened. The binder stud bolts should be tight or this will cause the loom to slam off. The front box plates also have a leather covering on the inside and this leather should be kept in good condition at all times to prevent damage to the shuttle and also looms slamming off.

(5) There is an enormous strain and wear on the protector rods and too often they do not get the needed amount of oil. (This is just one of the many places where the loom fixer can use his own oil cup to an advantage). If the protector rods or the protector rod caps are excessively worn it will prevent the daggers from being raised high enough to clear the frog steels and the loom will slam off occasionally. This condition can sometimes be remedied by removing and filing the caps to draw them in nearer the rod instead of replacing the rods. Sometimes the protector rod daggers will become chipped or rounded off on the points where they contact the frog steels. In this case the rod should be replaced.

(6) The protector rod fingers are attached to the protector rod and they contact the leather piece on the back binder. The set screws holding them to the rod will sometimes work loose and they will move out of adjustment. In this event the protector rod daggers will not be raised to a sufficient height to allow them to clear the frog steels and the loom will slam off. These fingers are designed for two set screws and there should be two set screws in them, as one is not sufficient to hold them in place.

(7) The crank and camshaft gears must be kept tight at all times or the loom will slam off. Also they must be in proper mesh. If they are too deep in gear they will grind and wear unnecessarily and also retard the speed of the loom and will cause the loom to slam off. If they are two shallow in mesh it will cause the power on the pick to be reduced and will cause the loom to slam off. These gears wear at the point of the pick. This wearing point is confined to one place, about three teeth in the gear on the crank shaft gear and at two places on the camshaft gear. (The crankshaft gear makes two revolutions while the camshaft gear is making one). If the gears are not too badly worn the life of these gears can be greatly prolonged by loosening the crankshaft gear and moving the worn portions of it off the point of the pick. Of course this will necessitate the retiming of all the cams and gears on the cam shaft. A new gear, crank or camshaft should never be put in to run with an old gear that has become worn. When one is replaced both should be replaced and if one of the gears is in reasonably good condition it can be saved and put in with another gear that has been slightly worn.

(8) There is a constant strain on the cam and crankshaft bearings while the loom is in operation and if either one of these bearings work loose the loom will slam off. If either of the bearings or either of the shafts become excessively worn it will reduce the power on the pick and cause the loom to slam off. The things which I will mention from time to time that reduce the power on the pick should be corrected instead of lowering the lug strap on the picker stick to compensate for this loss of power. Lowering the lug strap on the stick is just plain bad loom fixing. This creats a harsh, heavy pick and will put unnecessary strain on many parts of the loom, thereby causing needless wear and breakage of many parts.

(9) Place the shuttle in the box and box it properly. If the shuttle is not boxing correctly it will cause the loom to slam off, besides causing numerous other troubles. (Boxing the shuttle was covered in Part 12 of this series, March, 1950, issue of TEXTILE BULLETIN).

(10) If the picker is excessively worn it should be re-

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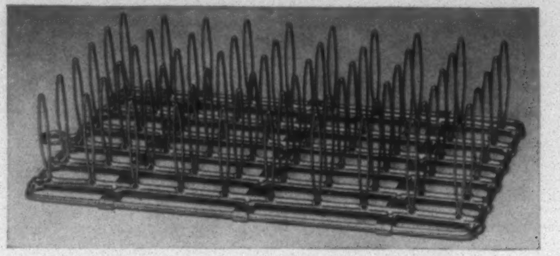

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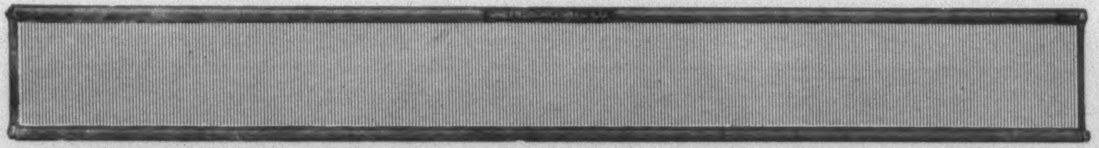

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placed. If it is loose it should be tightened. If it is out of parallel with the shuttle spur it should be paralleled, as either of these things will cause the loom to slam off. If the picker stick is excessively worn or split it should be replaced.

(11) If the parallel is loose on the rocker shaft it will reduce the power on the pick and cause the loom to slam off. If the parallel shoe is loose on the picker stick it will cause the loom to slam off. If the parallel plug is worn too much it will reduce the power on the pick and cause the loom to slam off. When checking the parallel be sure that the heel spring and the heel strap are both in good condition and properly adjusted and tightened.

(12) Lost motion in the pick shaft, caused by excessive wear of the shafts or the boxes or lost motion lengthwise in the shaft, will reduce the power on the pick and cause the loom to slam off. If the pick arm is loose it will also reduce the power on the pick.

(13) The height of the lug strap hangers or holders will vary slightly on the different models of looms and the type of fabrics being woven. Taking these things into consideration, each mill should determine what is best for its job. The measure should be from the top of the heel bolt to the bottom of the long lug and not from the top of the heel nuts or picker stick washer. An average range for this setting will be from eight to 8½ inches. Looms using larger and longer shuttles might find it necessary to drop slightly below eight inches, but I would not advise this if it can possibly be avoided.

(14) The check strap holder, the check strap, the check strap friction and the shuttle check all take a terrific beating while the loom is in operation. If either of them work loose, and they very often do, it will prevent the shuttle from boxing perfectly and cause the loom to slam off. If the check holder or the friction bracket are allowed to continue loose, while the loom is in operation, the lay will become damaged beyond repair and the lay is a very expensive part. (Adjusting the check strap and the shuttle check was covered in Part 12 of this series, March, 1950, issue of TEXTILE BULLETIN).

(15) The leather bumper on the shipper end of the loom is wedge, driving fit in the picker stick slot of the lay and will last for many years before becoming worn enough to require replacement; but the bumper on the battery end of the loom is held in place by a bolt extending through the picker stick guide, the bumper and the sword extension and this bumper will requently become worn to the extent that it will cause wear on the picker stick and thereby reduce the power on the pick and the loom will slam off. This bumper bolt should be kept securely tightened at all times.

(16) Too short a stroke, or throw, on the picker stick will reduce the power on the pick and cause the loom to slam off. The pick cam timed too early or too late will do the same.

(18) If the tension on the cloth or warp yarn is too tight it will reduce the space between the open sheds of the warp yarn and thereby trap the shuttle and cause the loom to slam off. If the tension is too slack it will cause the shuttle to be thrown out of the loom and the loom will slam off.

(19) If the harnesses are not set and timed properly it will cause the same troubles as mentioned above in 17 and can and does cause many other troubles beside the ones mentioned.

(20) A belt too slack or too tight will cause a loom to slam off. If the belt is too slack it will slip or give too much on the pick and reduce the power. If the belt is too tight it will cause the lay to rotate unevenly and this jerky movement of the lay will prevent the proper boxing of the shuttle and the loom will slam off. The belt should not slip on the pulley when the loom picks, but it should be slack enough to stretch or give slightly on the pick. This will give a smooth, easy pick and a smooth unbroken rotation of the lay. Most loom fixers use starch on the loom belts when the loom is not running smoothly. I do not approve of the use of starch on a loom belt or any belt, as it only gives temporary relief and leaves the belt in worse condition than before it was applied. If the belt is too tight it should be taken off and pieced. If it is sticky or gummy, as they will be at times in all weave rooms due to the heavy humidity, the best remedy I have found is to scrape the surface of the belt clean, using a sharp edged tool (a half round file is good) and then apply a small amount of tallow, or Neatsfoot oil is much better. When I speak of tallow I do mean pure tallow and not what we use and call shuttle tallow, as most of this so-called tallow contains some wax, which of course should never be applied to a loom belt. The pure tallow or Neatsfoot oil applied to a belt will increase the usable life of the belt and also will maintain it in a soft, pliant condition. A friction too loose on motor-driven looms will cause the loom to slam off. A loose friction can be caused by excessive wear or improper adjustment of any of the parts connected with the friction mechanism, from the shipper handle to the friction disc.

Reasons and Values of Routine Checks

I realize that the things I am advocating are somewhat of a departure from the regular established methods and procedures of fixing looms now being followed in most mills. I think every experienced weave room man will agree that everything that I have advocated checking can, and does, cause the loom to slam off. It will be surprising to many how quick this check can be made, provided the loom is in reasonably good condition, and if the loom is not in good condition, it certainly is good loom fixing to locate the troubles and correct them in order to avoid more and preventable troubles at a later date. I do not claim that the loom fixer will always have the time to do all the jobs he might find needing attention when making this routine check, but it is good loom fixing to detect these things and have them corrected. For instance, as a rule the fixer would not have the time to remove cam and crank shafts, lays, etc., and at the same time keep the looms on his job running.

Most mills have breakdown men or overhaulers to do the big jobs on the looms which would take up too much of the fixer's time. Unless these troubles are found and corrected from day to day the general efficiency of all the looms will gradually be lowered and the supply cost will gradually rise. I think the loom fixer is the proper one to locate these troubles. By so doing he will correct many small troubles before they develop into big jobs or breakdowns. It will enable him to become a much better loom fixer and he will soon learn that the jobs he will prevent will be saving him much more time than is required to make the routine checks every time he works on a loom, regardless of trouble with the loom. I have two reasons

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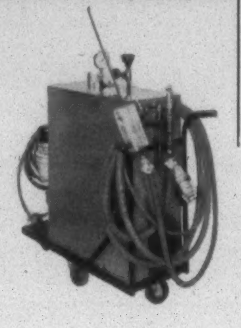

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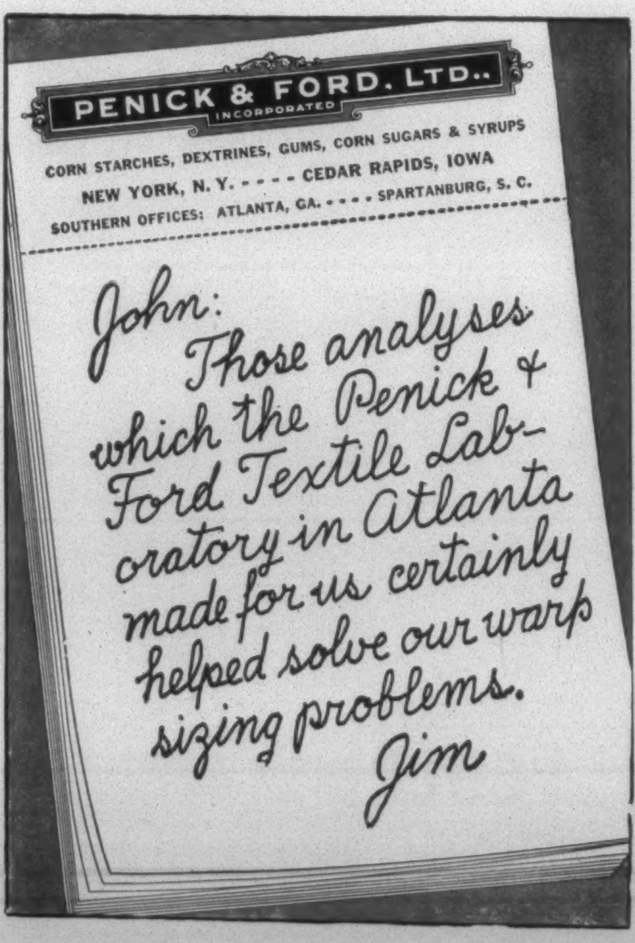

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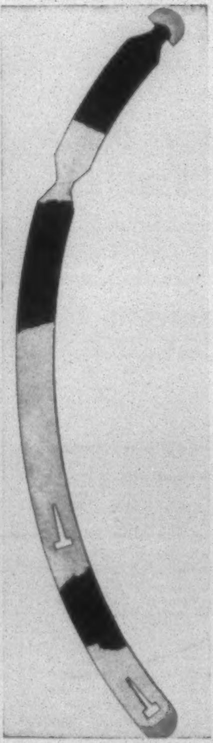

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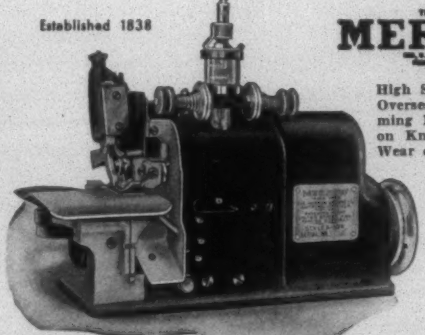

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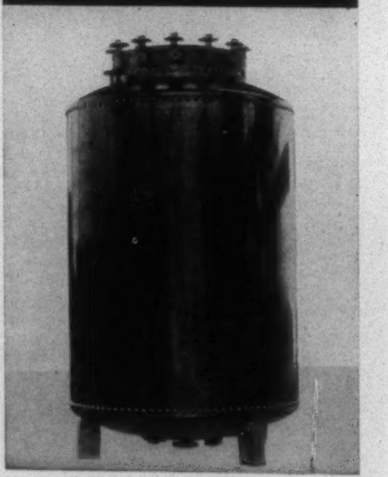

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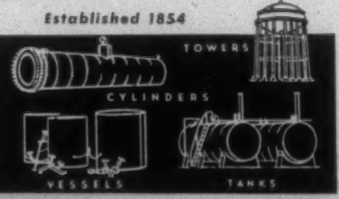

for suggesting that the above checks be made in the order named; first, is for the fixer's convenience, to save him time and wasted effort while going over the loom, and second, first things must be done first when fixing a loom or most of the fixer's work will be nullified. If the fixer does not study and learn these reasons why, and follow them through, he will be working in a confused state of mind and not be quite sure about what he is doing or why he is doing it thus and so.

We must believe in a thing, be thoroughly convinced a thing is good before we can accept and use it whole-heartedly. To one wishing to prove the merits of the things I have advocated herein, I would suggest they make the following test: write the 20 things I have named on 20 sheets of paper, one on each page, have a good loom fixer check 50 or 100 looms and write down under the correct heading the things he finds needing attention.

Bleaching, Dyeing & Finishing

Fast Shades On Nylon Textiles

By G. T. DOUGLAS

WHEN a synthetic fiber is discovered, it is first subjected to physical tests for strength, elongation, elasticity, etc., and its resistance to domestic and laundry washing agencies such as soap, mild alkalies and bleaching solutions is studied. If reports are favorable, the fiber is made available to the spinner who passes the yarn to the weaver, both assessing the performance of the new material on existing processing machinery. Investigations are conducted to obtain optimum conditions of processing and all being well, or promising, including the economic side, a new fiber is projected for development to the manufacturing scale. Even before all this work is completed, the color chemist has had the opportunity of carrying out preliminary investigational dyeing experiments on the fiber and naturally, all the available types of dyes are applied by conventional methods to assess the dyeability of the fiber.

It is amazing the enthusiasm, sometimes misplaced enthusiasm, that is engendered in a fiber when it has first been colored. The dyestuff used may possess little or no fastness properties and may not meet the mildest of wet fastness treatments, or may even be destroyed by sunlight in the course of a few hours. Rarely is it possible to forecast the fastness properties of a dyestuff on a new fiber. But to the eye, color has added beauty and the organic chemist may have fleeting visions and dreams of his new fiber displacing all other natural and synthetic fibers. As yet, no fiber has possessed all the desirable properties of the natural fibers and usually, also suffers from some of their defects. Nylon is no exception, but its growing importance in the textile field shows that this synthetic fiber is establishing itself and most people will agree that the future for nylon is bright.

Dyeing of Nylon

Nylon can be dyed with almost every range of dyestuff and it can be said that there is no more versatile fiber as far as "colorability" is concerned. However, the dispersed acetate rayon dyestuffs have undoubtedly been the most popular colors and will continue to be so. For many purposes, such as lingerie and dress goods, in view of their excellent leveling properties, compatability in admixture and their ability to cover yarn irregularities, dispersed dyestuffs are eminently suitable. Soluble acetate rayon dyestuffs, e.g. Solacets, are also admirably suited for nylon dyeing. The dyestuffs in this class build up well and are more fast than the dispersed types to washing, in that adjacent white nylon is not stained from alkaline soaping liquors.

The acid dyestuffs provide a comprehensive range of shades of superior wet fastness to both the aforementioned ranges and also yield, in general, brighter shades. The premetallized dyestuffs have good light fastness but do not build up well on nylon while the shades are limited in their brightness. Basic dyestuffs are bright and are readily applied but suffer from extremely low light fastness properties while direct dyestuffs, apart from a few which almost approach acid dyestuffs in structure, yield low color value or only tint nylon. Not one of these ranges is fast to repeated severe washing and to achieve this it is necessary to resort to chrome, vat and azoic dyestuffs.

Chrome Dyestuffs

A study of the application of chrome dyestuffs to nylon was made and it was soon evident that chrome dyestuffs were difficult to chrome when using normal wool techniques. Increased quantities of reagents and an increased time of processing, to effect complete metallization, only yielded limited success and had the added disadvantage that stripping of the dyestuff by acid dichromate was accentuated.

Analysis of the problem suggested that the difficulties arise because: (a) the absorptive capacity of nylon for dichromate ions is much less than that of wool; (b) in contrast to wool, the nylon is incapable of readily reducing dichromate anions to chromic cations, which are required before chelation with the dyestuff can take place; (c) chroming with chromic salts, such as chromic sulphate or chromic fluoride, is impracticable, because nylon does not readily absorb metallic cations.

Investigations have shown, that while the absorption of dichromate ions is low, it is nevertheless sufficient for complete metallization of most dyestuffs. It follows, therefore, that in the afterchrome method of applying chrome dyestuffs, the reduction step is the principal difficulty. This has been overcome by the simple expedient of introducing a reducing treatment after the chroming stage. This not only insures maximum metallization of the dyestuff within the nylon, but also completely removes residual dichromate, which is not removed by simple washing treatments. Residual dichromate, present within the nylon, is liable to produce serious defects in the dyed material. These are: (1) on exposure to sunlight, the residual dichromate, present within the nylon, is photo-reduced with a corresponding degradation of the fiber; (2) there is a possibility that dichromate may be removed in sufficient quantity by perspiration to produce skin irritations.

Not only does the special technique devised at Blackley completely eliminate these defacts, but it also enables milder conditions of chroming to be employed, in which the amount of dichromate and the acidity of the croming bath are reduced.

As a class, the chrome dyestuffs have poor redistribution properties, so to insure level dyeing, the absorption of dyestuffs must be carefully controlled.

For maximum penetration and levelness of result, the majority of the chrome dyestuffs are applied as follows: The dyebath is set with the requisite quantity of predissolved dyestuff, 1/2-2.0 per cent ammonia (.910) and 3.0 per cent ammonium acetate. Dyeing is commenced cold, the temperature is slowly raised to 95°—100° C. and dyeing continued for at least three-quarters of an hour. To complete exhaustion, a gradual addition of up to four per cent formic acid (85 per cent) is made. Chroming is effected in a bath set with four per cent formic acid (85 per cent) and ½-2 per cent potassium dichromate, depending on depth of shade. These quanties are based on a liquor ratio of 40:1. After chroming for one hour at 95° C., dissolved sodium thiosulphate approximately four times the quantity of dichromate used, is added to the dyebath, and 20-30 minutes allowed to complete the reduction of dichromate within the nylon and produce maximum metallization of the dyestuff.

When heavy shades are being chromed, a trace of dyestuff present in the chroming bath may cause flocculation of colloidal sulphur. In machine dyeing especially, this precipitation of sulphur is objectionable. The precipitation can be avoided by an addition of 0.3 gram dissolved glue per litre of chroming liquor, immediately before the addition of sodium thiosulphate. Alternatively, adjusting the bath to a pH of 4.5 is also effective. Before drying, it is advantageous to give the nylon a light scour.

Only a few members of the chrome dyestuff range are not applicable to nylon by this method. In their dyeing behavior on nylon, chrome dyestuffs exhibit all the characteristics of acid dyestuffs. The individual rates of dyeing are of little value for predicting the behavior of dyestuffs in admixture.

The majority of chrome dyestuffs possess excellent building-up properties on nylon, but even at 95° C., have poor redistribution properties. As a class they have poor temperature range properties, and in general, their application is not feasible below 90° C. For piece goods, closed winches or jigs should be employed and for yarn, pressure circulating machines are ideal. Yarn irregularities are not covered by chrome dyestuffs. In this respect the chrome dyestuffs behave in the same way as the acid dyestuffs. Some members of the range are also sensitive to traces of iron and copper yielding shade inconsistencies.

Chrome dyestuffs are very much faster to wet treatments on nylon than they are on wool. Selected chrome dyestuffs are capable of withstanding five separate one-half hour treatments at 98°-100° C. in five g/l soap and three g/l soda ash. A combination worthy of note for the production of mode shades is: Solochrome Yellow C, Solochrome Red ER, Solochromate Fast Blue B.

Nylon delustered with titanium dioxide is fairly rapidly degraded on exposure to sunlight. Experiments have shown that, if nylon is treated with as little as 1/20 per cent potassium dichromate and then reduced with sodium thiosulphate, the material is nearly four times as resistant to light as is untreated nylon. Because the recommended chroming process involves a similar treatment, chrome dyed material is also more resistant to light than untreated delustered nylon. This protective action of chromic salts makes chrome dyes very suitable for usages on materials which are liable to be subjected to prolonged daylight exposure. A range of shades excepting greens can be produced with light fastness figures of five up to six or seven on the Society of Dyers and Colorists' scale of one to eight.

An extension to this work has shown that copper complexes of the chrome dyestuffs yield, in general, a range of dyestuffs of higher light fastness, although the wet fastness properties are not so high, but are still superior to acid dyestuffs in this respect. Cationic copper, in the same way as cationic chromium, is not taken up readily by nylon, so the simple expedient of preparing a salt where the copper is in the anion was resorted to. Copper sulphate was treated with bisulphite in the presence of sodium chloride to give sodium cuprochloride ($NaCuCl_2$). After dyeing with the chrome dyestuffs, as set out previously, the nylon is treated in a bath at 95° C. for one-half hour containing two per cent sodium cuprochloride. The copper anion is readily adsorbed onto the end amino groups and chelation is effected without any reduction treatment as in the case of the bichromate.

Cobalt complexes of chrome dyestuffs yield a few interesting shades but in general these possess low light fastness. The cobalt is introduced by employing sodium cobaltinitrite as an aftertreatment as for the formation of the copper complexes. As this chemical possesses quite strong oxidizing properties certain of the chrome dyestuffs suffer oxidatory degradation. This cobalt aftertreatment is, however, of very limited interest commercially.

Vat Dyestuffs

To augment the range of fast to boiling chrome colors, it is necessary to employ selected vat dyestuffs. Application by normal methods fails to give satisfactory results as the alkaline leuco compounds possess slow diffusion rates into nylon and in many cases only slightly tint the fiber after normal dyeing periods. White and Nicol showed that application could be effected if high temperature dyeing was resorted to. By employing caustic sida and Formosul, and dyeing at 90°-95° C. for three-quarters to one hour, good color value could be realized. Exhaustion is improved by the addition of sodium chloride. For oxidation, air, percarbonate in the soaping bath, or persulphate and acid, may be employed.

Blues of the indanthrone type are very liable to be partially destroyed, greening of the shade occurring and in some cases may yield a gray shade due to the high temperature. Certain halogenated and dibenzoylamino-vat dyestuffs also suffer from degradation under alkaline reducing conditions at high temperatures.

In general, the vat dyestuffs yield low light fastness on nylon as they are not aggregated to the crystalline state in which they are present when dyed on cellulosic fibers. An analysis of the results of daylight exposures shows that a definite correlation exists between the light fastness realized on nylon and the chemical constitution of the vat dyestuffs. The following table gives the light fastness of the main constitutional dyestuff groups:

Chemical Type	Number of Homogeneous Dyestuffs Tested	Light Fastness Range S.D.C. 1-8 Scale
Thioindigoid	5	1 to 1-2
Pyranthrone	3	1 to 2
Phthaloylacridone	4	1 to 3-4
Benzoylamino-anthraquinone	6	2-3 to 3-4
Dibenzanthrone	13	3-4 to 5-6
Anthraquinone-carbazole	13	4-5 to 5-6
Indanthrone	7	5-6 to 6-7

A further interesting generality is that all dyestuffs which are known to accelerate the tendering of cellulosic fibers on exposure to light have a very low light fastness on nylon.

The following vat dyestuffs are of especial interest on nylon as they possess good light fastness and, of course, are fast to repeated soap and soda boiling:

	Light Fastness on S.D.C. Scale
Caledon Gold Orange 3G	5-6
Caledon Brilliant Violet 3B	4-5
Caledon Dark Blue G	4-5
Caledon Jade Green XN	5

Solubilized Vat Dyestuffs

These suffer from the same defects in light fastness as their parents. They are difficult to apply, requiring also high temperatures to realize penetration of the nylon. The vat esters are best applied from an acid Formosul dyebath and the parent bath is regenerated by treatment in a solution containing one-quarter per cent sodium nitrite and one-quarter per cent sulphuric acid (168° Tw) at 50° C. for 15 minutes. A patented process recommends a steaming aftertreatment and this, causing some aggregation, does effect an improvement in light fastness but in all cases the light fastness of the vat esters is inferior to that realized on the cellulosic fibers. Because of application difficulties, the vat esters are not likely to find a very great outlet on all-nylon fabrics.

Azoic Dyestuffs

The view generally held is that azoic combinations cannot be applied to nylon by the normal techniques employed for their application to cellulosic fibers as (1) the naphthol body has poor affinity from alkaline solutions at low temperatures, and (2) the diazonium chloride does not penetrate into the naphthol treated nylon.

A reinvestigation into the application of azoic dyestuffs to nylon yielded some interesting points:

(a) *Uptake of inert coupling component*—The Brenthol range was applied to nylon as free hydroxy compounds and as the sodium salts and the absorption measured at temperatures 20°-100° C. Over a period of 45 minutes, maximum absorption was realized at 80°-85° C. The absorption of the hydroxy compounds at 85° C. was generally appreciably lower than that of the naphtholic ion when sodium chloride, which increases exhaustion, was added to the dyebath. The uptake of Brenthols on nylon was found to be as high as onto viscose rayon when employing the optimum temperatures of application for each fiber. The following table gives a selection to illustrate the absorption of Brenthols on to nylon.

	Per Cent Exhaustion
Brenthol AS	39
Brenthol BA	51
Brenthol BT	87
Brenthol CT	76
Brenthol FR	40

Dyebath conditions: 2g./l. Brenthol, L.R. 20:1, Temperature 85° C. Time—45 minutes.

(b) *Coupling*—From a consideration of the chemical structure of nylon, it is not unexpected that the diazonium chlorides are totally incapable of penetrating nylon from acid solution and in practice this was found to be the case. Treatment of Brenthol dyed nylon yielded little or no coupling in a diazotized base even at slightly elevated temperatures. Any coupling which took place was mostly on the surface of the fiber and the tint produced was neither fast to soaping nor to rubbing. The free base was, however, readily absorbed from an alkaline dyebath even at low temperatures. Diazotization of the base in situ, by treatment in sodium nitrite and hydrochloric acid for one-half hour at 25° C., produced coupling. Full coupling was complete within the period. Increase in the temperature of diazotization yielded increased rate of coupling, but less bright shades were realized. At this stage fast to rubbing results were obtained with all azoic combinations.

(c) *Soaping*—Soaping is necessary to remove excess base or uncoupled Brenthol but it was noticed that with many combinations a bright orange product was bleeding off during the scouring treatment. Investigation showed that this was nitrosilated Brenthol. Brenthol of the *B*-oxynaphthoic acid series yielded bright orange and the carbazole types green, or violet nitroso bodies which were not fast to light.

(d) *Elimination of Nitrosilated Brenthol* — Alkaline scouring agents were tried but failed to effect removal of the nitroso Brenthol. Decreasing the sodium nitrite content of the diazotization bath reduced the nitroso compounds, but also reduced coupling. The addition of formaldehyde to the Brenthol bath increased absorption of the Brenthol and was completely effective in eliminating the formation of nitroso bodies but other defects were apparent. Firstly, there was a considerable loss in depth of shade realized. The rubbing fastness deteriorated, many of the azoic combinations gave bleeding on soaping and there was a considerable amount of uncoupled Brenthol-formaldehyde reaction product which was incapable of being removed by a soaping treatment. For these reasons formaldehyde was not considered to be really beneficial. The most effective method evolved was to employ twice the theoretical quantity of base to Brenthol, based on the absorption figures of the components into the nylon. By this expedient, the formation of nitroso Brenthol was kept to a minimum.

Two further points may be emphasized here. On giving the azoic dyed nylon a normal soaping aftertreatment it was noticed that: (1) Color changes which occur with certain azoic combinations on cellulosic fibers were completely absent in nylon. This is due to the fact that no aggregation of the pigment particles takes place in the nylon and aggregation cannot even be effected by pressure steaming or by a swelling treatment. However, when certain nitro-bases were used, reduction appeared to occur to give marked shade changes. (2) The rubbing fastness decreased. This is due to the pigment being forced to the surface and only when it does reach the surface is aggregation possible, yielding a reduced fastness to rubbing. High molecular weight azoic combinations are less prone to migrate and with these good rubbing fastness is obtained. Also the more complex the molecule the greater the washing fastness.

In outline, the modified method consists of simultaneous high temperature absorption of dispersed base and Brenthol from a caustic alkaline solution, followed by cold diazotization and coupling in situ. Surface pigment, uncoupled intermediates and deleterious by-products, such as nitroso Brenthols, are removed by a thorough soaping treatment.

In all cases, the shades are typified by excellent color yield, but the brightness does not, however, equal that realized on cellulosic fibers. Selected combinations are fast to boiling soap and soda as far as loss in depth and change of shade is concerned. Adjacent, undyed cellulosic fibers are very slightly stained but white nylon is heavily stained, more so if vigorous boiling is carried out, as azoic pigment in a very fine state of dispersion is readily absorbed by nylon. In full shades, with selected combinations, the fastness to light varies from good to excellent.

Although most azoic combinations can be applied by this method, those which yield shades of good wet, light, and rubbing fastness are very limited. It has been found that only those azoic combinations of the highest molecular weight, e.g. Brenthol LTR, AN and Brentamine Fast Scarlet G, Scarlet GG, Scarlet RC, Red KB, Red LTR, Red RC, Garnet GBC and Blue B Base, yield shades fast to rubbing and wet treatments.

With careful selection from the chrome, vat and azoic ranges, fast to boiling shades with good light fastness can be realized and, in staple nylon yarns and fabrics, where the best possible fastness is called for, these fast ranges will serve the dyer well.

Nylon Union Materials

By far the most important union, at the moment, in which nylon is finding outlet, is wool/nylon. Here, fast shades are called for, mainly for men's half-hose, but fastness to boiling soap is neither required nor expected. Incorporation of nylon into wool gives a material which possesses high resistance to abrasion and also added strength over that obtainable with wool alone.

The dyeing of wool/nylon is complicated as it is not possible to deduce any broad generalization on the behavior of any class of dyestuffs. Each dyestuff has its own characteristic behavior and choice of these must be based on the nature of the union, the fastness requirements and the individual properties of the appropriate dyestuffs. For fast shades, milling acid, pre-metallized and chrome dyestuffs provide the most suitable products for the dyeing of wool/nylon union materials.

The distribution of the dyestuff between the two components of the union is dependent upon the depth of shade being dyed. Dyestuffs possess a greater intrinsic anionic affinity for nylon than they do for wool, so that when pale shades are dyed and saturation of the nylon does not occur, the nylon is dyed heavier than the wool. As the depth of shade is increased, a concentration of dyestuffs is reached where the nylon and the wool are dyed to an equal depth of shade. This corresponds to the saturation value of the

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nylon. Beyond this point, build up only occurs on the wool component. The percentage depth of shade at which equality is attained on the wool and nylon, varies widely from dyestuff to dyestuff and is dependent upon the dyestuff's anionic affinity, basicity, diffusibility and commercial purity.

It is convenient to classify the dyestuffs arbitrarily on a basis of partition between the wool and the nylon at a medium depth shade. This classification immediately gives the dyer an indication as to which dyestuff will give solid shades in pale, medium and heavy depths. Chrome dyestuffs are best suited for the production of heavy fast shades on wool/nylon unions as many of the chrome dyestuffs yield equal or heavier depths on the nylon when dyed at a three per cent depth of shade. The after-chrome process must be employed and again it is recommended that a sodium thiosulphate treatment be given to avoid all risk of dermatitis due to the presence of dichromate in the nylon.

Black, brown, navy blue and maroon shades, popular in men's half-hose, are readily obtained with chrome dyestuffs. For pale and medium depth shades, the pre-metallized dyestuffs are eminently suitable, but the low saturation value of these on nylon excludes their use in heavy depths. Where brighter shades are desired, it is necessary to employ the milling acid dyestuffs and these are also suited to the production of pale and medium depth shades provided a neutral dyeing technique with the aid of Carbolan Salt A, is employed. However, in certain cases, it is necessary to use dispersed acetate rayon dyestuffs to augment the depth of shade realized on the nylon to obtain solidity of shade on the union. This expediency tends to lower the wet fastness properties of the dyeing but provided a back soaping is given, a reasonable degree of fastness is realized if heavy depth shades are not being dyed.

Wherever wool is met the present-day tendency is to chlorinate to achieve non-shrink properties, and the sales value of a "fully shrunk" label is not to be neglected. All the recorded tests on 100 per cent nylon indicate that such a treatment, particularly on subsequent exposure to sunlight, would result in very severe tendering of the nylon. A typical wet chlorination process was selected for study, a normal antichlor treatment being given after chlorination. Briefly the results were as follows:

	Percentage loss in strength after light exposure
Control 100% nylon (not chlorinated)	37
100% nylon	66
50% nylon, 50% wool	44
5% nylon, 95% wool	36

It appears, therefore, that preferential absorption of chlorine by the wool is causing protection of the nylon and chlorination can be regarded as more or less satisfactory for wool/nylon unions provided there is more than 50 per cent wool present in the union. Selection of dyestuffs is, of course, necessary to withstand the chlorination process and it is to be noted that the fastness to chlorination of a dyestuff on nylon is not necessarily the same as its fastness on wool.

Nylon/Cellulosic Unions

For the production of fast shades on nylon/cellulosic unions, the choice of suitable dyestuffs for the cellulosic portion is confined to vat, solubilized vat or azoic dyestuffs. If the percentage of nylon is low and there is an intimate fiber blend, vats or vat esters applied by a normal process, but using higher temperatures, will give reasonable solidity. The over-all light fastness will be only a little inferior to that experienced on an all-cellulosic material. If the nylon

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component is visually evident, the cellulosic component may be dyed with vat, vat ester or azoic dyestuffs at low temperatures and the nylon cross dyed with selected acid, pre-metallized or chrome dyestuffs. This means solid or contrasting shades can be produced, the fastness being limited by the dyestuffs applied to the nylon.

Nylon/Silk Unions

Silk/nylon unions are likely to be met in limited quantities only and the fastest shades would be realized with chrome dyestuffs employing a similar technique to that for wool/nylon unions. Milling acid dyes and pre-metallized acid dyestuffs, bearing in mind the partition between the two fibers, will for most purposes be satisfactory from a fastness viewpoint. Incidentally, many chrome dyestuffs on nylon will withstand the silk degumming process and can be employed for effect threads in silk/nylon unions.

This is the position as far as the production of fast shades on nylon textiles stands today. The call for high fastness on nylon textiles is, as yet, not great, but the more progressive dyers are tackling these problems when the demands are made. All the processes described, except those in which limited interest has been expressed, have been used in bulk working in Britain, and certain lines, where the demand is high, are being run daily. However, in five years time, perhaps the colorists' views and recommendations may have changed completely and a quite different story will be told.

Mr. Douglas, who is associated with Imperial Chemical Industries, was one of the speakers during the second Canadian Textile Seminar held Sept. 15-16 at Queen's University, Kingston, Ont.

TRICKS of the Trade

Edited by PROF. KENNETH S. CAMPBELL
Chemistry and Dyeing Department, North
Carolina State College School of Textiles

Dyeing With the Aid of Molten Metal

One of the "hottest" subjects in dyeing circles today is the process introduced by Standfast Dyers and Printers, Ltd., of England, and there is no doubt but that it is being viewed with a good deal of respect. There is, furthermore, no question that it will have as great or greater and more lasting impact upon the industry than was the case with the Vat-Craft process which was discussed in these columns some months ago.

Very briefly, the molten metal dyeing process consists of passing the prepared and dried cloth, open-width, through a dyebath (or actually what amounts to a pad liquor) floating in the upper part of one leg of a U-box upon a bath of a low-melting metal alloy kept at about 212° F. The cloth proceeds through the molten metal and up through a salt bath floating at the top of the other leg at speeds as high as 120 yards per minute; the cloth is then oxidized and washed as necessary as in conventional continuous open-width processing. The pad liquor and salt wash liquor which float at the top of both legs of the U—because of the much higher density of the metal—also serve to protect the metal surface from air oxidation. The volume of dye liquor is kept to an absolute minimum (actually about one gallon) with the result that the feed liquor is of the same concentration as that of the original bath. The cloth passes directly from the dye solution into the molten metal bath just beneath it which may be at any temperature above its melting point and is usually close to 212° F.; the pressure on the cloth at the bottom of the five-foot column of metal is 20 pounds per square inch and acts as a metal squeeze, giving an expression of about 140 per cent which is uniform regardless of variation in cloth thickness; since the dyeing actually takes place while in the metal bath this means that the liquor to goods ratio is, in effect, 1.4 to one. Important features of the molten metal-surrounded "dyebath" are that air is completely excluded from the time the cloth is impregnated with dye liquor, and that because of the intimate contact a very rapid transfer of heat from metal to cloth takes place, thus attaining dyeing temperature almost immediately.

At the minimum speed at which the present Standfast machine will run, 30 yards per minute, the cloth is in the "pad" liquor 0.44 seconds, and in the metal 6.7 seconds. At top speed of 120 yards per minute this is reduced to 0.11 seconds in the dyebath and 1.67 seconds in the metal; however, provided that time in the metal is sufficient to fix the color, variation in speed from run to run or within a run is said to have no effect on depth of shade or quality of dyeing.

It should be recognized that the process described is in commercial operation, over six million yards having been dyed by it as of eight months ago.

The concensus of persons in a position to assess the importance of this new development in continuous dyeing with whom we have talked, seems to be that they must be shown the actual cost figures on dyeings of *strictly comparable quality* on both molten metal equipment and conventional U. S. continuous equipment before jumping to any conclusions as to the value of the new process. There is apparently a reasonable doubt that the latter can show much advantage where large yardages are involved; there is also reason to believe that colors which give trouble on our present ranges—due to lack of penetration and level dyeing, dye, stability, etc.—will also present some difficulties in the newer system. For short runs which would ordinarily have to be dyed on a jig, the molten metal process claims a four to five times greater production per man; this is due to speed of dyeing plus the fact that only a few minutes are needed to clean the machine for a change in shade; the small volume of dye liquor means little waste of color. It would appear that the molten metal technique should find its greatest use where a large amount of jig dyeing is carried out, and in circumstances where the flexibility of a unit which can be used economically for both short and long runs is needed.

The fastness properties of dyes applied by molten metal dyeing is claimed to be at least equal to that obtained by any other method of dyeing; washing fastness in particular is said to be superior. Presumably direct dyestuffs are also applicable by the Standfast process, although so far all of the emphasis has been placed on dyeing with vat colors.

It has been reported that a royalty of one-half cent per yard is to be charged users of the molten metal process. The metal itself is relatively expensive, a current quote being $1.70 per pound, and a certain entrainment of this metal by the cloth in its passage is probably to be expected. It has been said by some to amount to an average metal loss equivalent to about six-tenths of a cent per yard. In estimating advantages of the new process for a particular type of production these factors, in addition to initial cost, must of course be considered carefully.

The following communication comes from officials of Standfast: "It is proposed to place the administration of licensing to United States users in the hands of a United States firm and negotiations to this end are in progress. No United States firm is operating the process at the present, but many have sent inquiries and we have no doubt that some of these will have machines in operation before long. The amount of royalty in the United States will be determined shortly in co-operation with the United States administrator.

"Depending on the type of material being dyed, metal losses can cost 0.05 pence or more per yard. This is not an important figure in relation to prices, but steps can and are being taken to reduce the loss."

Daylight Fluorescent Colors

In the last several years more and more apparel articles have utilized the so-called daylight fluorescent dyestuffs for extreme brightness and startling color effects. Military use of fluorescent dyes for markers, signal flags and the like during the war brought home to many people the possibilities of these materials for non-military items; promotion of the trade-names "Coldfire" and "Day-Glo" has undoubtedly given impetus to this trend. (Modern optical bleaches, colorless dyes which fluoresce in the blue region of the spectrum, are an important related utilization of fluorescent materials). We have had numerous inquiries in regard to the nature of these colors and the cause of their exceptional brightness. The following, therefore, is an attempt to present briefly and as clearly as possible the story behind the fluorescent colors.

A limited number of dyestuffs of the basic, acetate, direct and acid types have the peculiar ability, when applied to the proper fibers, of imparting a color of such unusual vividness of hue that it appears almost luminescent in character—as though it were lighted from within. This is due to the phenomenon known as fluorescence.

Simple brightness of dyed shade results when a dyed textile reflects strongly certain of the spectral colors making up the ordinary white light to which it is exposed and absorbs (does not reflect) all of the other colors; if colors other than those producing the desired bright hue are also reflected the shade usually becomes to a certain extent muddied and loss of brightness results. There are many dyes which meet the necessary requirements and give relatively bright colors. Those dyes on fabric which fluoresce, however, in a manner of speaking get extra value from the light which hits them because some of the light which is absorbed, instead of having no effect on the reflectance of the sample, is re-emitted as fluorescence light, and if this fluorescence light is in the portion of the spectrum which the same normally reflects (i.e., the normal color of the sample), the effect is an appreciable increase in brightness; one example is the production of a fluorescent blue by the combination of a non-fluorescent blue and a colorless optical bleaching agent; in general the closer the fluorescence color to the natural reflection of the dyed fabric the more effective is the brightening effect. The brightening effect is also dependent upon the degree of fluorescence exhibited by the dyestuff. A large number of dyes on fabric have only a slight fluorescence which is of no practical importance in the colored textile (it does, incidentally, present a difficult problem in the spectrophotometric measurement of such a textile because the fluorescence introduces an error in the reflectance reading which cannot be corrected for by any practical means). Some dyes on fabric will fluoresce quite strongly when "activated" by ultraviolet light from artificial sources. In this case the effect is much greater in the absense of much visible light; theater carpets and stage costumes dyed with such dyes represent an effective use of this property. A very few dyes which fluoresce brilliantly in ultraviolet also fluorescue strongly enough in ordinary daylight to make an appreciable increase in the daylight brightness of the color. These are the dyes which have been used for novelty effects in beach wear, ties, caps, hose, sweaters, etc. Unfortunately the range available is limited to a few yellow, blue and red dyes, and many of the combination shades which might be expected are not possible without a serious loss in fluorescent value because of the "quenching" effect on fluorescence which often occurs when fluorescent and non-fluorescent dyes are mixed. (This is because the absorption band of the latter conflicts with the emission band of the former).

There are several additional important factors to be considered in the application of fluorescent dyes. Generally the intensity of fluorescence decreases with an increase in the depth of shade; this explains why there are no blacks or navies with good fluorescence. Sometimes the color of the fluorescence changes markedly with concentration due to the nature of the absorption curve of the dyestuff. The nature of the fiber and the weave of the fabric also contribute to the intensity of the fluorescent effect obtained. With one fluorescent direct color for instance, bright acetate will give about four times the fluorescence intensity of either cotton or wool, two and one-half times that of bright viscose, and about the same as nylon. Shades made with fluorescent dyes may prove practically impossible to match equally well in daylight and incandescent light unless exactly the same components are used because of the differing amounts of ultraviolet in the two light sources.

The names "Coldfire" and "Day-Glo" for daylight fluorescent dyed materials have been trademarked by Switzer Brothers, Inc., of Cleveland, Ohio, and a licensing arrangement is necessary in order to use them.

Chemical Research in the Textile Field

In view of the pre-eminence of Du Pont in the field of manufactured fibers today, we have chosen this month to discuss a recent article which tells in part how they got that way. The story is entitled, "How To Win at Research" and appeared in *Fortune* magazine for October, 1950. Consider having 35 million dollars a year to spend on research. Not all for textiles, of course, but a considerable amount of it since textiles represents about 28 per cent of Du Pont's sales dollar. Of the 35 million spent Du Pont expects about seven million to pay off in the coin of new business; the other 28 million goes down the drain. To Du Pont research is no magic word. It is strictly a gamble, yet at the same time a business necessity; they do research because they have to in order to meet competition. They fully expect that in 1970, 60 per cent of Du Pont business will come from materials practically unknown today.

It is difficult to draw much of a parallel between research in a chemical industry with large interests in textiles, and research in the textile industry. Because of the tremendous and constantly increasing importance of the manufactured fibers, however, it is certainly appropriate for the textile man to consider the mainspring of the machine which has done most to revolutionize his industry. That mainspring is research and it has so far perfected, or produced outright, for Du Pont, viscose and acetate rayon, high-tenacity rayon (Cordura), nylon, orlon and Fiver V. Incidental to the fibers themselves are a host of developments in bleaching, dyeing and finishing.

Du Pont needs the very broad commercial field which it encompasses to justify its huge research expenditure; this means that there is much more chance for any given research discovery proving immediately useful to the company; smaller companies with less diverse production could not possibly stand a proportional research budget. Among Du Pont rules for minimizing the risk involved in research are the following: great care and judgment in the choice of a research problem, patience, and knowing when to quit. The first depends upon the excellence and experience of their technical brains. Patience is required to wait out a research team until it pays—perhaps five or six years. On the other hand it may be extremely difficult to know when to quit. In Du Pont's words, "it's done by intuition but we prefer to call it intelligence."

The company may have at one time over a thousand individual projects under way, divided up among its 13 departments. It grinds out an average of one patent every day (many of which are purely "defensive" patents).

To Du Pont "research" is all exploratory work and product and process development up through the pilot plant stage. It carries on both fundamental research, which is concerned with discovery of new facts, information and ideas without regard to eventual utility, and applied research which is putting ideas to work or doing a job better or more cheaply. The discovery of the molecule known as nylon was the fruit of the first type of research; a better nylon, or a better car polish is the fruit of the second. It is generally agreed that only the largest companies can afford their own fundamental research programs as it is a gamble against terrific odds, yet industry as a whole cannot afford to let fundamental research stop if it is to progress; fundamental research replenishes the barrel of new ideas as application of these ideas empties it.

Du Pont has made what appear to be mistakes in research policy; it was slow to get into the production of the newer plastics: acetates, butyrates, ethyl cellulose, the vinyls and polystyrene, and lost ground to competition in these lines. It is difficult to understand why, although they produce great quantities of urea and formaldehyde, they have never gone into urea resins. Carothers (father of nylon) produced the first polyester back about 1930 and Du Pont made hundreds of them and concluded they would not make a useful fiber, yet a British firm found one which they called Terylene, so good that Du Pont took up a license for it and calls it Fiber V.

The Du Pont Co. has been consistently aggressive, however, in getting fibers into commercial production. Their intent, apparently, is to lose no time in getting a perfected fiber on the market as soon as possible so as to begin realizing a return on their research investment and to get as much as possible out of the 17-year patent protection.

Considering the efforts being put forth by Du Pont and by Union Carbide & Carbon, Monsanto-American Viscose (Chemstrand), Celanese and others, the developments in manufactured fibers in the next decade can conceivably dwarf those of the past 20 years.

Orlon Dyeing Progress Is Described

Recent developments in the dyeing of Orlon acrylic fiber, Du Pont's new synthetic fiber, and Fiber V, which the company is evaluating on an experimental scale, were described in a paper delivered by Dr. Paul L. Meunier, manager of sales development in Du Pont's Organic Chemicals Department, at a recent meeting of the Mid-West Section of the American Association of Textile Chemists and Colorists. In the last year, Dr. Meunier said. Du Pont dye research has made "four important improvements" in the technology of dyeing Orlon continuous filament fiber. The most important of them was the coloring of yarn, sewing degrees F. With equal success, insoluble vat colors in the form of vat acids have been applied on fabrics made from Orlon, as well as on Orlon yarns and fiberstock, Dr. Meunier said.

"In the case of fabrics, the vat acids are prepared in the usual manner and padded on the fiber, following which the material may be dried to insure level impregnation. After drying, the colors are oxidized by treatment on the jig at 200 to 212 degrees F., with peroxide and hydroxyacetic or some other suitable oxidizing medium.

"The vat acids are dyed on yarns and fiberstock by treating these materials in the vat acid liquor for 30 minutes at 212 degrees F., after which the dyed materials are rinsed and then oxidized at 200 to 212 degrees F., in a bath containing 2.5 grams per liter of potassium dichromate and two grams per liter of hydroxyacetic acid. Absorption of the vat acids is increased considerably by the use of two grams per liter of beta-naphthol in the dye bath."

A method has been developed, Dr. Meunier said, of obtaining black shades by the treatment of auto top fabrics made of Orlon on a closed jig with vat colors in the presence of high concentrations of color, caustic, and hydrosulfite.

Orlon acrylic staple, which is still under development, has markedly improved dyeing properties which make it suitable for wide textile uses, Dr. Meunier pointed out. The staple exhibits its best dyeing behavior in the range of 200 to 212 degrees F. and, therefore, is readily dyed in existing mill equipment. At the present time, most of the Orlon staple dyeing is carried out with selected acid and chrome colors applied with sulfuric acid, Dr. Meunier said. "It is particularly noteworthy that all acid dyes on Orlon staple possess excellent wet fastness properties. Thus, it is believed that adequate dyeing and fastness will be obtained in suiting fabrics, especially when the Orlon is dyed in rawstock, top, or yarn form with chrome and acid colors."

Dr Meunier pointed out that Fiber V, in continuous filament form, has shown considerable promise as a fiber for blouses, curtains, shirts, lingerie, sewing thread, and several industrial fabrics, while the staple, being the most resilient of all synthetic fibers, is being intensively studied for applications in the suiting field.

"In regard to dyestuff absorption, Fiber V is rated between nylon and Orlon arcrylic fiber continuous filament. Actually, it is closer to nylon than to Orlon in this respect. The new fiber exhibits its greatest affinity for dispersed acetate dyes. Vat colors and certain 'Naphthanil' combinations dye Fiber V under pressure at high temperatures. Many types of colors are also applicable by the Thermosol dyeing process. None of the water-soluble dyes, including acid, chrome and direct colors, have affinity for this fiber.

"Basically, there are three methods of dyeing Fiber V; aqueous dyeing at temperatures near the boil, aqueous pressure dyeing at temperatures above 212 degrees F., and Thermosol dyeing which involves heat treatment. All these methods depend on the swelling by water or steam at high temperatures, carriers, or dry heat."

In describing the methods, D. Meunier pointed out that conventional package-dyeing machines can be adapted for Fiber V dyeing, as with Orlon acrylic fiber, at temperatures around 250 degrees F. This, he observed, is a "very important development because dye exhaustion and penetration of the fibers are excellent at these temperatures and carriers are not required." Dr. Meunier said that for aqueous dyeing, the acetate dyes now will provide the only full line of shades, but, he added, it is expected that a fully satisfactory range of dyestuffs will be available for all types of dyeing on Fiber V.

Piedmont A.A.T.C.C. Unit Elects Briggs

Edwin A. Briggs of Southern Franklin Process Co., Greenville, S. C., was elected chairman of the Piedmont Section of the American Association of Textile Chemists and Colorists at the unit's Fall meeting Oct. 28 in Charlotte, N. C. Mr. Briggs succeeds Robert H. Smith of High Point (N. C.) Chemical Mfg. Co. Other new officers are Hobart Souther of Cone Mills Corp., Greensboro, N. C., vice-chairman; W. Chester Cobb of Arnold, Hoffman & Co., Inc., Charlotte, secretary; J. C. Whitt of Standard Hosiery Mills, Burlington, N. C., treasurer; and A. R. Thompson of Ciba Co., Charlotte, custodian.

Named councilors were John B. Neely of Burlington Mills Corp., Greensboro; Sumner H. Williams of General Dyestuff Corp., Charlotte; Linton Reynolds of Riegel Development Laboratories, Inc., Ware Shoals, S. C.; and Henry A. Rutherford of the School of Textiles at North Carolina State College. The sectional committee is composed of J. L. Moore of E. I. du Pont de Nemours & Co., Charlotte; H. J. Jordan of Wiscassett Mills Co., Albemarle, N. C.; William D. Livingston of American Aniline Products, Inc., Greensboro; and W. Carl Wilcoxson of General Dyestuff Corp., Greenville.

The technical session was featured by papers on "Piece Goods from the Cutter's Viewpoint," by Lawson W. Turner, Jr., of N. & W. Industries, Lynchburg, Va., and "Dyeing of Algosols on Hosiery," by Karl A. Bridges of General Dyestuff Corp., Charlotte, N. C.

1951 A.A.T.C.C. Parley Slated Oct. 17-19

The 30th national convention of the American Association of Tetile Chemists and Colorists, to be held at the Hotel Statler, New York, Oct. 17-19, 1951, is expected to be the largest gathering of textile dyeing and finishing technicians in the history of the industry, according to Charles W. Dorn and Paul J. Luck, co-chairmen for the meeting. Featured at the convention will be the largest exhibition of dyestuffs, materials and process equipment that the organization has ever sponsored. The Georgian Room, Ballroom Foyer with adjoining parlors and Penn Top of the hotel have been set aside for 125 displays.

A majority of the approximately 6,500 members of A.A.T.C.C. is expected to attend this convention and its corollary exposition. In addition to delegates, special registration will be available to non-members engaged in textile dyeing and finishing, to visitors from allied industries such as the cutting, fashion and home economics groups and also to textile students in school-organized parties. Many foreign dye experts and plant operators are also expected

The committee for the textile exposition, as it has been termed, is headed by Henry L. Young, vice-president, Interchemical Corp., and the exposition management firm of Campbell-Fairbanks, Inc., has been engaged to direct the exhibit program of the convention. Albert C. Rau, vice-president of the Campbell-Fairbanks firm, is well known to exhibitors in the textile field as the manager of the Knitting Arts Exhibition and the American Textile Machinery Exhibition. As a special feature of the show, the ballroom foyer and adjoining space has been designated for the exhibits of primary fiber and fabric producers and styled "The Spectrum Rotunda."

Committee chairmen for the 1951 affair include: Charles W. Dorn, director of research laboratory, J. C. Penny Co., Inc., and Paul J. Luck, metropolitan sales manager of Calco Chemical Division, American Cyanamid Co., convention co-chairmen; William A. Holst, Jr., National Aniline Division of Allied Chemical & Dye Corp., technical program; Herman E. Wilde, Merck & Co., entertainment and equipment; Weldon G. Helmus, Fair Lawn Finishing Co., banquet; Leonard S. Little, Du Pont Dyestuffs Division, symposium luncheon; John H. Hennessey, General Dyestuff Corp.,

PLANNING NEXT YEAR'S A.A.T.C.C. CONVENTION—Floor plans for the 1951 American Association of Textile Chemists & Colorists textile exposition at Hotel Statler, New York City, Oct. 17-19, get a check-over from Convention Co-chairman Paul J. Luck *(left)* and Charles W. Dorn *(right)* with Henry L. Young, chairman of the exhibits committee.

registration and finance; Samuel A. Pettus, Du Pont, transportation; Kenneth A. Howry, *Daily News Record,* publicity; Norman A. Johnson, *American Dyestuff Reporter,* printing; Ernest H. Hart, Richmond Piece Dye Works, Inc., reception; Dr. Herman E. Hager, General Dyestuff Corp., ladies program.

Serving with Mr. Young on the convention exhibits committee are: C. W. Bendigo, editor in chief, *Textile World;* J. B. Goldberg, director of research, J. P. Stevens & Co., Inc.; Otto C. Haufe, Turner, Halsey Co.; Thomas F. O'-Brien, R. W. Bates Piece Dye Works; Myron D. Reeser, *American Dyestuff Reporter;* Francis S. Richardson, Waldrich Co., and Albert J. Royce, Sr., president, Royce Chemical Co.

Little Named A.A.T.C.C. Research Head

Leonard S. Little, of E. I. du Pont de Nemours & Co., Inc., New York, was chosen to head the research activities of the American Association of Textile Chemists & Colorists, starting Jan. 1, at the recent meeting of the national council of the society in New York City. Mr. Little will succeed J. Robert Bonnar of General Dyestuff Corp., who resigned after holding the post six years. In his new post, Mr. Little will hold the titles of chairman of the executive committee on research and chairman of the general research committee.

George H. Schuler, director of technical laboratory, Du Pont, Wilmington, Del., was put in charge of all national publicity for the association. He succeeds Paul J. Luck, Calco Chemical Division, American Cyanimid Co., who resigned this post because of his duties as chairman of the New York Section and co-chairman of the forthcoming annual convention in New York

William A. Holst of National Aniline Division, Allied Chemical & Dye Corp., was appointed 1951 national technical paper chairman and as such will be in full charge of technical papers to be presented at the New York convention.

Patrick J. Kennedy of Du Pont reported to the council that a student intersectional paper contest, such as he was delegated to organize, may be possible in 1951, although participation may not be as wide as desired because of the lateness of organization. He noted particular enthusiasm among students themselves, especially in the South. The first textbook in the proposed vocational training course of the association probably will be ready for publication early next year, the council was told. It will be the volume on mathematics.

Army, U.S.D.A. Plan Anti-Mildew Tests

Extensive tests to discover better ways of protecting cotton fabrics from rot and mildew will be made co-operatively during the next few years in various parts of the world by the Army Quartermaster Corps and the U. S. Department of Agriculture, it has been announced. Results obtained in these trials will guide the Quartermaster Corps in developing new cotton fabrics, for use in tents and other equipment, that will have greater resistance to damage by micro-organisms. Besides revealing the actual effectiveness under field conditions of various fungicidal treatments for cotton, the tests also will provide a check on present laboratory methods of estimating, without extended field tests, the probable performance of the treated fabrics.

Four widely separated locations are being chosen for the experiments, so that the cotton materials under study can be exposed to typical conditions occurring in hot-humid and hot-dry climates throughout the world. The test fabrics are being treated with selected fungicides and other chemicals at the Southern Regional Research Laboratory, Bureau of Agricultural and Industrial Chemistry, in New Orleans, La. This Department of Agriculture laboratory also will operate at New Orleans one of the four exposure stations, to obtain data on performance of the fabrics in a humid, subtropical climate.

The Quartermaster Corps will have a test station at Las Cruces, N. M., to determine fabric performance in a hot, dry climate, and also will operate two overseas stations, which have not yet been selected but which probably will be located in the Caribbean and South Pacific areas, to secure additional data on fabric performance under the most severe tropical conditions.

The armed forces experienced drastic losses of cotton materials during World War II as a result of the destructive action of fungi and molds on tentage, clothing, and other equipment, especially that used in the South Pacific. Since then, scientists of the Quartermaster Corps and the Bureau of Agriculture and Industrial Chemistry have been studying the deteriorative effects on fabrics of these micro-organisms, which occur in thousands of forms and behave differently under different conditions of temperature and humidity.

A number of fungicides and other chemical compounds that have proved effective against fungi in laboratory tests will be applied to cotton duck and Oxford-type fabrics for the field tests. After exposure at the four test stations for periods of a month to about 2½ years, the fabrics will be re-examined in the laboratory. Although the anti-mildew treatments to be used already have been evaluated by laboratory methods, exposure under actual field conditions is essential to obtain data for comparison with the test-tube findings and to determine the accuracy of methods used in predicting fabric resistance to rot and mildew. The tests are expected to provide the most reliable data ever collected on the effectiveness of the various fungicidal treatments for cotton.

Adopt Standard For Coated Cotton Fabrics

The proposed simplified practice recommendation for vinyl and pyroxylin coated cotton fabrics has been approved, and will become effective Jan. 1, 1951, the Commodity Standards Division of the Office of Industry and Commerce, U. S. Department of Commerce has reported. It will be identified as R242-51. The material covered by this recommendation is used for automotive upholstery and trim, furniture upholstery, case coverings, footwear, luggage, sporting goods, bookbindings and many other products.

This recommendation was proposed by the Plastic Coatings and Film Association, as a result of a survey which disclosed that more than 76 types and styles of vinyl coated fabrics and more than 88 types and styles of pyroxylin coated fabrics are being produced, the principal variations being in finished weights. The simplified list contains 20 styles of vinyl coated fabrics and 25 styles of pyroxylin coated fabrics. For each of these styles the recommendation gives the width in inches and linear yards per pound of the original gray fabric and the minimum width and weight per linear yards of the coated fabric. The recommendation also contains a very useful table which enables technicians and others to compare the fabrics on the basis of weight per square yard.

It is the belief of the sponsors of the recommendation that the simplified lists will adequately cover normal requirements for these products. Some of the advantages expected to follow its general adoption are: concentration of demand by users, with resulting increase in efficiency and decrease in costs of production, handling and inventory; greater knowledge on the part of customers as to the precise characteristics of each of the styles and their suitability for specific end-uses; more intelligent specifications by purchasers as a result of increasing knowledge of the product and its uses; more intelligent application of the products by purchasers, and elimination of the use of the product for end-uses for which the product is not adaptable, with resulting over-all improvement of the general reputation of the products of the industry. Until printed copies are issued, mimeographed copies of Simplified Practice Recommendation R242-51 may be obtained from the Commodity Standards Division, Office of Industry and Commerce, Washington 25, D. C.

Group To Study Fastness To Sea Water

Matthew J. Babey of the Calco Chemical Division of American Cyanamid Co. has been named chairman of a subcommittee on fastness to sea water of the American Association of Textile Chemists and Colorists. Mrs. Winifred N. Pardey of the General Dyestuff Co. is secretary of the committee. The members are: Robert C. Allison of the Geigy Co., Edward Artim of S. Augstein & Co., William F. Brommelsiek of Forstmann Woolen Co., Percy J. Fynn of J. C. Penney Co., George Greendonner of Sandoz Chemical Works, and John Ploubides of Pacific Mills' Worsted Division.

The committee met recently at the annual A.A.T.C.C. convention and organized a program. It is expected that the work done by this committee will be conducted in the A.A.T.C.C. Perspir-Ometer. Experimental work will be done critically reviewing the present sea water test, after which recommendations will be made.

William F. Brommelsiek of Forstmann Woolen Co. has accepted the chairmanship of the wool group subcommittee of the wash fastness committee, which will study test methods to predict the launderability of wool fabrics. The American Institute of Laundering recently co-operated with the A.A.T.C.C. in a critical review of the work done by the wash fastness committee of the latter association. This combination of the launderer's point of view and the technologist's testing method, has resulted in a better understanding of the problems of laundering by both groups. The proposed new tentative test of the wash fastness committee of the A.A.T.C.C. reflects the advantages of this co-operative work.

Development of a space-saving method for shipping "dehydrated" fabrics, whereby goods are shipped in one-third the space normally required, is announced by Elton F. MacDonald, president of Cappel, MacDonald & Co. of Detroit, Mich., and Dayton, Ohio. Air, which forms the large part of the bulk in all fabrics, is drawn from the materials by use of a special gas. The material is then pressed into a compact package, taking up only one-third the space usually required. Mr. MacDonald explained that the system is no longer in the experimental stage, but has been employed successfully by the Air Force in shipping fabrics used by the armed forces in the Korean campaign.

Maintenance, Engineering & Handling

Mill Modernization Is Still Important

By JAMES T. MEADOR

THIS concerns a problem with an old mill, such as faced by many of us these days when materials and equipment are in such short supply, and yet, at the same time we must modernize these plants enough to bring them up to such standards of production as to meet and compete with new and ultra-modern mills on the present-day markets.

One such mill is located in North Carolina, with an old section of one-story construction built about 1910 in a manner that was frequently employed at that time, but, would at this day and age, certainly be off standard for wood type construction. The walls were of the usual 17-inch brick construction, with eight-foot bays, 54-inch wide brick openings for windows, and 42-inch brick pilasters. The building was of two 25-foot bays width, with the floor being of wood joist type construction, using three-inch by 12-inch joists supporting a sub-floor of dressed two-inch by 12-inch material, and over this was the finished floor of 13/16ths of an inch (approximate thickness) hardwood, some maple and some oak. These joists were "toed" into the brick wall on each side of the building on beams running through the length of the building, being supported on brick piers, 17 inches square, on eight-foot center-to-center spacings. The posts were nine-inch by nine-inch, dressed and chamfered, spaced on eight-foot centers, directly over the piers, but supported by the heavy subflooring on the joists. These posts were topped by wood plates of approximately 30 inches length, which in turn supported the roof beams which were arranged in the orthodox or usual mill type construction, also on eight-foot spacing and with 25-foot spans, resting directly on the brick pilasters on both sides of the mills, with end caps extending out to support the overhang of the roof. The roof deck was somewhat thin, being made up of dressed two-inch by six-inch and two-inch by eight-inch material which gave a finished thickness of approimately 1¾ inches. This was covered by regular flat deck tin roofing.

Altogether, this old section of the mill was in pretty sad shape for modernization to any extent that would require much rearrangement of the present machinery, or, the addition of new and additional machinery. However, the newer section was of standard wood two-story type mill construction in good condition and requiring nothing in the way of structural repairs—only machinery and electrical rearrangement being required in this section.

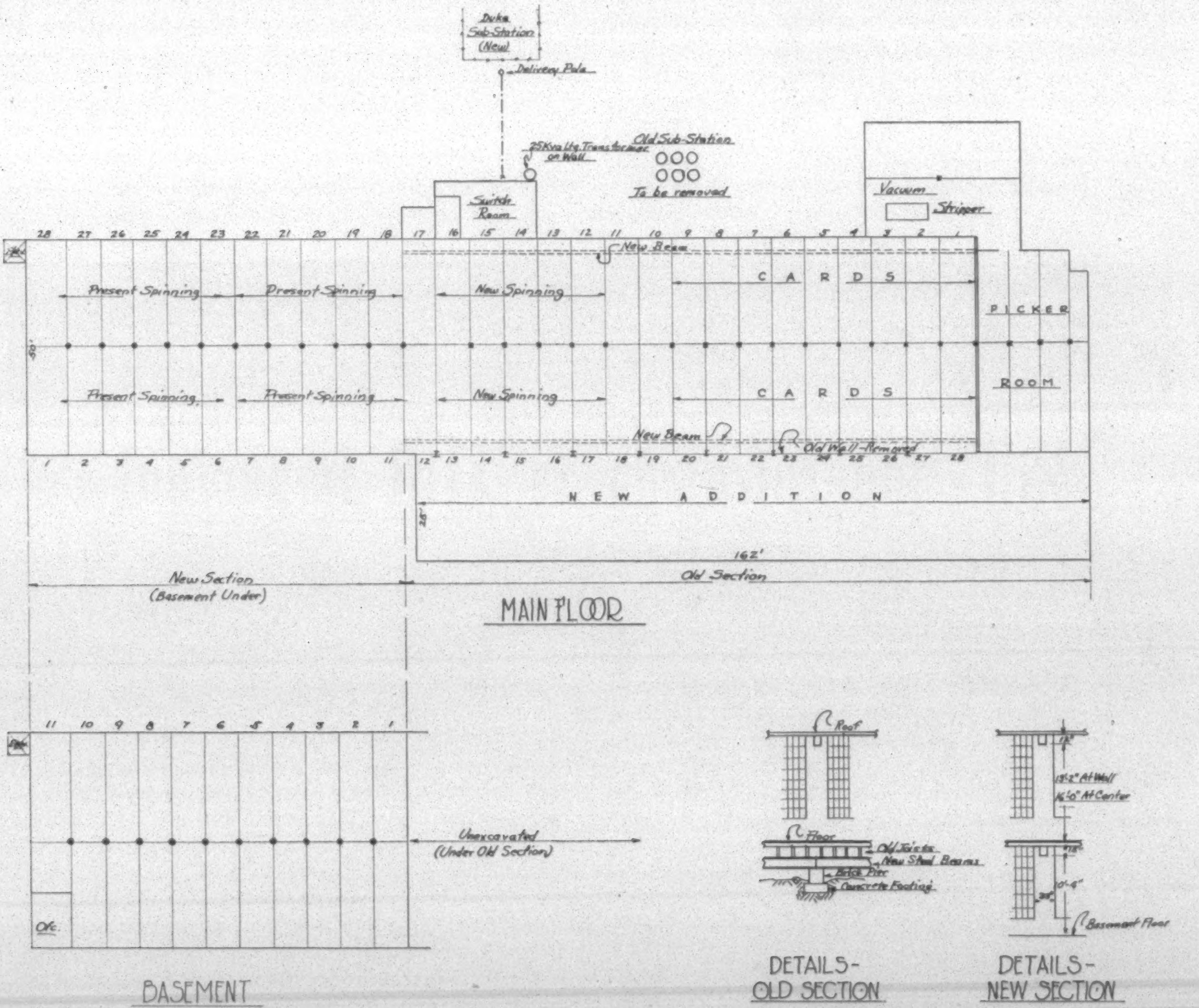
After a careful examination by a building contractor, he determined that practically the whole part of the old mill building would require a most extensive repair job to put it in condition for productive use. The decision was made to let the contractor proceed with this work in such a manner as to make these repairs in the greatest haste, as time was beginning to run short, and yet keep in mind the very important fact of keeping the costs down as low as possible.

The first step was the job of under-girding the floor of this old section by means of new steel beams which were installed at a distance of approximately three feet from the wall on each side of the mill and running the full length of each side. This arrangement then carried the full floor load along the side walls of the mill by relieving the end-rottened joists which were previously supported by the "notched-in" system as shown by the detailed sketch. In this manner the floor was leveled to a condition suitable for the installation of machinery upon it, which, as you can see from the sketch, included cards and spinning frames.

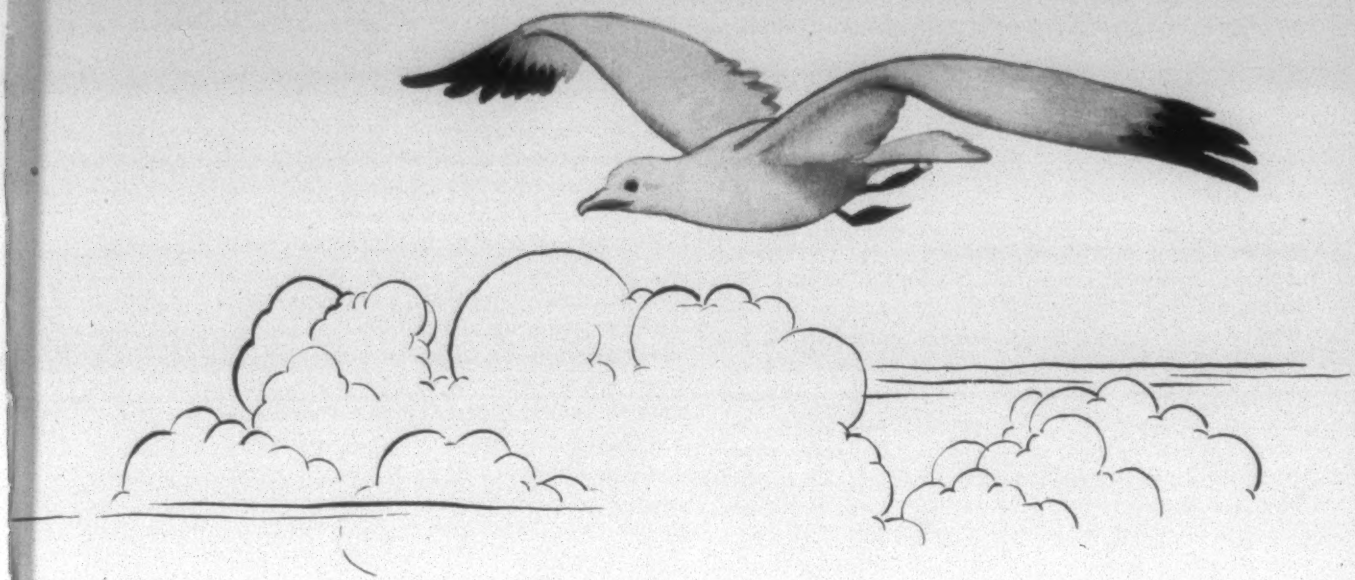
On the side of the new addition, the old brick wall was completely removed, and instead, steel columns on 16-foot centers were installed to carry the proportionate part of the roof load of that part of the old building and also of the new addition.

In many places, the roof beams were badly affected by the dry rot, and were quite "soft." These were replaced with steel beams having dressed four-inch by six-inch nailing timbers bolted to the top flanges. All of the roof beams in the new addition are of this type, and are arranged on eight-foot spacing through the length, which is properly 20 bays, although there is shown a slight discrepancy of about one-half of a bay in the picker room area, which was brought about by building changes made several years back in order to provide for a dust flue in connection with the under-floor dust chamber.

The head room clearance under the floor of the old mill



Drawing indicates changes which have been made to complete this mill modernization project with minimum delay and expense.



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was very close, yet, it was necessary to build brick foundation piers on concrete footings to carry the girder beams mentioned above. The spacing of these piers was on eight-foot centers for the full length of the beams on both sides of the building. They were 17 inches by 17 inches, square. Fortunately, the condition of the earth under the floor was of good bearing capacity and was not over a previous fill, therefore the footings were not required to go very deep for a good base.

For power, the mill had previously employed two line shafts to drive the card room, one driven by a 20-horsepower motor with flat belt, and, one driven by a 35-horsepower motor also with flat belt, with 25-horsepower four-frame drives on the 16 spinning frames. The Foster Model 101 winders in the basement had the usual individual motor drive arrangement. The power was 550 volts, three-phase, 60 cycles, furnished by a split-up arrangement of two separate banks of transformers, stepping down from 2,200 volts. The mill bought only 550-volt power, so, used a 25 KVA, 550/110-220 volt transformer for lighting current and a bank of transformers of the oil-cooled type, mounted on a pole at the back side of the mill, connected in open-delta arrangement in order to provide 110-volt, three-phase, power for their humidifiers.

For lighting, only incandescent light bulbs in brass shell sockets on green-and-yellow, twisted drop cord were used; usually being 100 watt size, except in some cases 150 or 200 watt sizes were used.

Under this modernization program, the present source of power will be discontinued, with the coming in of the Duke Power Co., who will serve the load from a new substation, shown at the back of the mill, with a single bank of transformers of such rating as to take care of the increased power requirements of the machinery in the new addition, as well as the existing machinery and the new spinning in the old area. All of the old spinning frames, 16 in all, and the six new ones are to be equipped with ten horsepower drive motors with narrow-range Tex Rope drives and sliding bases. The two card line drives are to be equipped with Tex Rope drives from the motors to the line shafts, and all the line shafting was fitted throughout with ball-bearing hanger boxes with new hanger frames. The lap winders, combers, drawing, slubbers and fly-frames are also scheduled for individual drives with Tex Rope drives. The picker room, while already partially individualized, will be fully equipped with individual drives. A 40-horsepower vacuum stripper is to be installed in the room just back of the picker room, which will have its own direct-connected motor.

Under this new set-up, the lighting is to be changed completely to an adequate fluorescent system utilizing the double 40 watt, porcelain-enamelled fixtures with the new "cool-white" color tubes and with "no-blink" starters.

Thus, this old mill is being modernized to a condition that it can more than meet competion with uniform, quality production at lower costs and trouble-free operation.

Power And Mechanical Engineering Show

Better economy in power production and far wider use than has ever yet been seen were forecast by the 19th Exposition of Power and Mechanical Engineering, presented under the auspices of the American Society of Mechanical Engineers in Grand Central Palace, New York, Nov. 27 to Dec. 2. Held in conjunction with the society's annual meeting, the display was topical, packed with examples of advanced practice in every department, tuned to progress in industrial mechanization.

Like previous expositions, the exhibits included comprehensively materials of engineering construction, component and auxiliary apparatus and distribution facilities and controls associated with the generation of power. Supplementing such displays was a second group composed of tools and production equipment, most of which was associated with the production and maintenance of power plants. Featured units for the most part were actual examples taken from current work. Animated displays were carefully scaled to show the nature and sequence of operations at a glance.

A featured display of considerable economic significance was that of the Baltimore & Ohio Railroad, emphasizing progress in the cleaning and preparation of coal and in the design of coal burning equipment. The display of activated diagrams included the chance and flotation process for cleaning and preparing bituminous coals, tilting tangential burners for furnace temperature control and a verical unit boiler.

Discernible at many exhibits throughout the exposition were evidences of the direction of the engineering effort generally tending toward the production of more power per unit of heat in the fuel, at lower production costs. This is taking the general course of the past few years, which leads by the way of higher temperatures and pressures in steam generation. It starts with combustion at higher temperatures, making use of lower grade fuels than have previously been employed in many instances.

One of the most promising of the new materials, just coming into use, is ductile iron which was shown at this year's exposition for the first time. Although this new magnesium iron was introduced commercially only two years ago, 70 companies are now licensed to manufacture it in the United States and Canada, and castings in commercial production range from a few ounces to 100,000 pounds. Ductile iron is described as a new engineering material which combines the process advantages of cast iron with the product advantages of cast steel. It behaves like steel under load, appears to be the equal of gray iron in resistance to mechanical wear, has excellent heat resistance; its machineability is noteworthy.

One contribution to the economy of power plants and of many industrial processes utilizing heat, evidenced marked progress through the increased number and striking character of the group of exhibits devoted to the clarification of gases. Its most prominent phase this year was in the problem of smoke control, which represents a very considerable waste of heat energy, recoverable by the use of modernized equipment.

Still another group of exhibits that has grown appreciably since the last exposition is in the field of variable drives, especially applications in small powers, suitable for machine tools, processing equipment, winding equipment, drying equipment and many others are among types requiring variable speed operation. There was a sizable offering of speed reducers and an important group of motor drives incorporating both speed reduction and speed variation, by a variety of methods of electrical design. From the volume of such exhibits alone, it is possible to mark the growth of individual motor drives in all manner of mechanical applications.

A large group of exhibits was comprised of liquid han-

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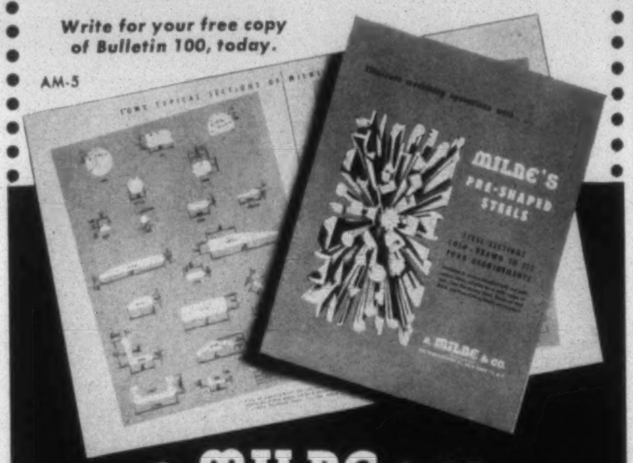

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dling equipment: pumps, valves, piping, traps, filters and other classes—all developed by specialists, and many of them revealing new designs introduced within the period since the last power show was held.

Equipment for conveying, weighing, transporting within the plant, and feeding, both liquids and solids, was the subject of numerous displays. The array of mechanical appliances and tools was as complete and informing as in prior years. Several exhibits of tool equipment were designed for production plants, as well as the maintenance and service equipment which is a definite adjunct to the power plant.

At its meeting Nov. 1 the textile division of the American Society of Mechanical Engineers elected R. A. Palmer of Carlyle Johnson Machine Co., Manchester, Conn., chairman for the next two years. At the same time the group made plans to participate in the A.S.M.E. Spring meeting which is scheduled April 3-4 at Atlanta, Ga. Other new officers of the textile division are: F. D. Snyder, Westinghouse Electric Corp., Boston, Mass., vice-chairman; Lindsay Dexter, Pepperell Mfg. Co., Boston, secretary; and R. M. Jones, Saco-Lowell Shops, Biddeford, Me., treasurer.

Reduce Handling Costs With Power Trucks

Power industrial trucks are enabling textile manufacturing and finishing mills to save time and labor in material handling operations and are increasing the value of overhead storage space, according to W. C. Bryan, materials handling engineer for Elwell-Parker Electric Co. of Cleveland, O.

For example, a truck, an operator and one helper now easily load a box car with finished cloth in 40 minutes, a total of 1.3 man-hours. To accomplish the job manually with hand-operated equipment would take eight men 3½ hours, or 28 man-hours. In storage, 54 rolls of cotton cloth are stacked by means of a power truck in the same floor area formerly occupied by 15 rolls when hand-stacked horizontally. Now six rolls are placed vertically on pallets, and the loaded pallets are tiered three-high. This method triples available storage area and in many instances has avoided need for new building construction.

Similar economies are apparent in all other mill operations where power trucks are employed. Reduced costs give users a strong competitive advantage over slower and more expensive methods which add nothing to market value of the goods but pyramid production costs. At the American Finishing Co.'s Memphis, Tenn., plant eight to ten million yards of cotton cloth is bleached, dyed, printed, mercerized or sanforized every month, working 24 hours a day 5½ days a week. This is one of the largest and most efficiently operated finishing plants in the United States.

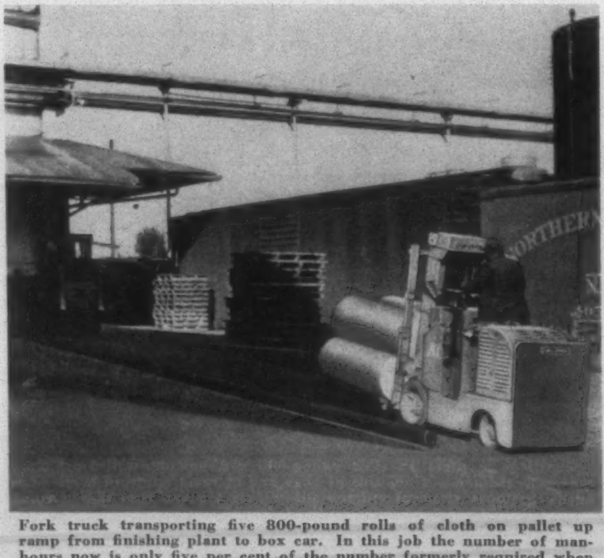
Power trucks are used for the rapid, repetitious handling of heavy loads of raw materials and finished products which would be too hard or difficult for manual labor. Though the need for some manual labor always exists here as elsewhere it is tending toward a minimum as methods are simplified. Now nearly all the 1,200 employees are engaged in the better paid classes of work.

Mechanized material handling is done with six standard Elwell-Parker fork lift trucks. First of these was installed four years ago since which time five more of the same make have been added. These trucks are operated 24 hours a day in three shifts. A system of inspection keeps them on the job at all production time. Two are serviced each week-end, each truck thus being serviced every three weeks. Weekends the engineering department uses some of them for maintenance and repair work on processing equipment.

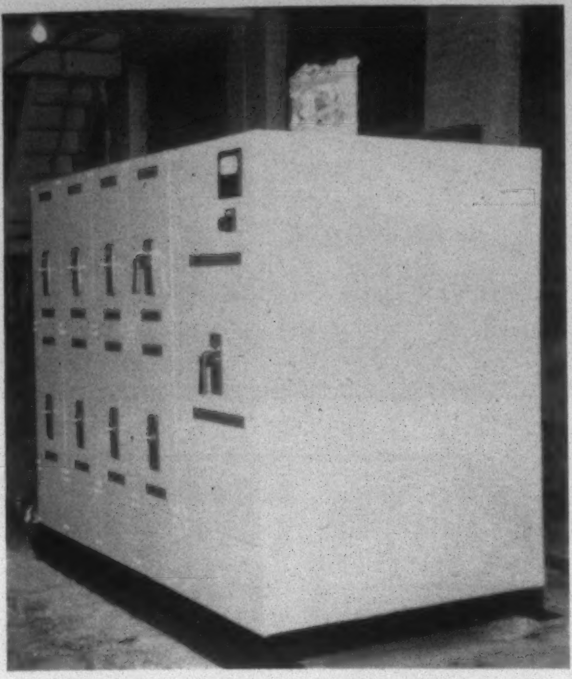
Trucks make more effective the use of available storage areas. Six rolls are stacked vertically on a pallet tiered three-high. Now 54 rolls are stored in a floor area formerly occupied by only 25.

Fork trucks are especially useful where heavy loads can be handled either on pallets or bare forks. Tonnages of chemicals including dyes, starches, paper in large rolls and flat-stock bundles are trucked between plant departments, warehouses and freight cars. Now tonnage handling costs are measured in cents instead of dollars, while total plant output per man-hour has shown a remarkable rise.

A significant fact is that where heavy handling is part of manufacturing, warehousing and shipping power trucks are regarded by employees as desirable equipment. Here there is always a waiting list of applicants to operate the trucks. A successful applicant must have been employed five years, the result is that equipment is in the hands of skilled men.



Fork truck transporting five 800-pound rolls of cloth on pallet up ramp from finishing plant to box car. In this job the number of man-hours now is only five per cent of the number formerly required when the work was done manually with hand-operated equipment.



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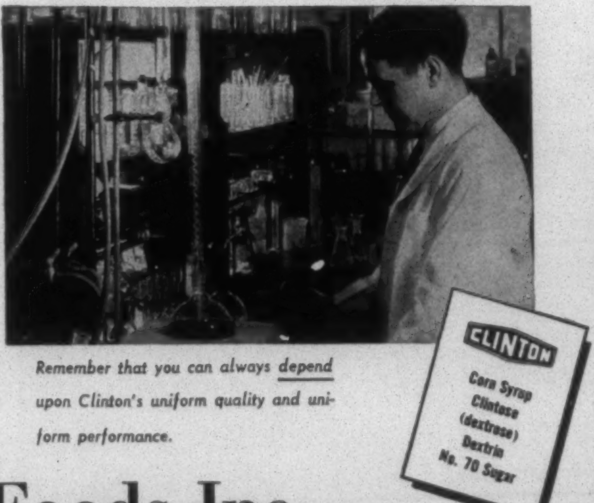

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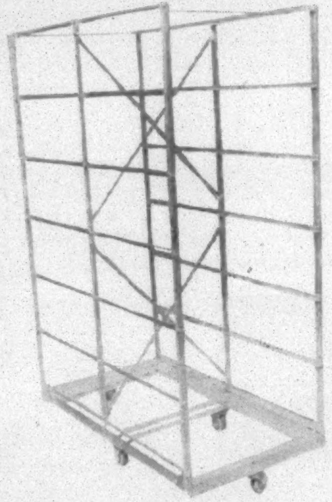

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at Burnsville, N. C., as preparatory department supervisor. . . . Other Hazleton personnel assigned to the Burnsville plant are John Macara, who will take over a supervisory post at the new plant, and Sylvester Thomas, Walter Beltz and Edward Stefanoski, who will help install looms at the new facility.

Coit M. Robinson, president and treasurer of United Spinners Corp., Lowell, N. C., recently was elected president of the Gastonia (N. C.) Executives Club.

David J. Crowell, formerly associated with Cannon Mills Co. at Concord, N. C., has been named superintendent of Wennonah Cotton Mills, Lexington, N. C. . . . Earl L. Stewart, previously with Republic Cotton Mills, Great Falls, S. C., has joined Wennonah as head of the new cost and standards department of the plant. Both Mr. Crowell and Mr. Stewart are graduates of N. C. State College.

W. H. (Bill) Brinkley, general sales manager of the Southern sales division for E. F. Houghton & Co., Philadelphia, Pa., receitly completed 25 years with the firm.

Dr. Jack Compton, formerly technical director of the chemistry section of the Institute of Textile Technology, Charlottesville, Va., has been named technical director of all branches of the institute's research program. Prior to joining the institute, Dr. Compton was research head of Celanese Corp. of America at Rome, Ga.

L. W. Bishop has resigned as director of the South Carolina Research, Planning and Development Board to become president of Hunt Machine Works, Inc., Greenville, S. C., manufacturer of looms and other textile equipment. Mr. Bishop assumes his new duties Jan. 1.

V. R. Cromer has been elected vice-president of Howell Mfg. Co., Cherryville, N. C., succeeding Carl V. Cline of Hickory, N. C., who continues on the board. All other officers and directors were re-elected.

J. Duncan Webb, formerly treasurer of U. S. Rubber Export Co., has been elected controller of Dan River Mills, Inc., Danville, Va., succeeding T. A. Bassin, resigned.

William P. Saunders, well-known textile executive of Robbins, N. C., has resigned as mayor of Robbins due to the fact that he is moving his residence to Southern Pines, N. C. Mr. Saunders had been mayor of the town since it was incorporated in 1935. It was incorporated as Hemp, N. C., but the name was changed to Robbins in the early 1940s. He is president of Robbins Mills (N. C.), Inc., and Robbins Mills (Va), Inc., and executive vice-president and a director of the parent company, Robbins Mills of New York.

OBITUARIES

George W. Babcock, Sr., 71, president of Puritan Cordage Mills, Louisville, Ky., died Nov. 21. Mr. Babcock helped found the mill in 1909 and had been its president 32 years. Surviving are his second wife, four sons, two daughters and two sisters.

Aaron H. Bradley, 78, for the past 38 years superintendent of the Crystal Springs Bleachery cotton mill at Chickamauga, Ga., died recently after a lengthy illness. Surviving are his wife, two sons and three daughters.

Walter F. Daboll, 70, for the past 25 years Southern representative for Watson-Williams Mfg. Co., shuttle manufacturers of Millbury, Mass., died Nov. 24 in Greensboro, N. C. He had represented the firm in the South for the past nine years, first with headquarters in Greenville, S. C., and later at Greensboro. He also was associated with Watson & Desmond of Charlotte, N. C., at the time of his death.

Lee D. Gribble, 71, former joint-owner with the late Ralph Armstrong of Waxhaw (N. C.) Cotton Mills, died last month. Surviving are his wife, four sons, a daughter, two brothers and two sisters.

Frank C. Hewitt, vice-president and general manager of Windsor Print Works, a unit of Consolidated Textile Corp., with main office in New York City, died Nov. 26 in North Adams, Mass., of a heart attack.

K. Leon Jones, Sr., 65, proprietor of Atlanta (Ga.) Braid Co. and head of K. L. Jones Machinery Co. in Atlanta, died Nov. 28 of injuries received two weeks earlier in an automobile accident. Surviving are his wife, two daughters, a son, three sisters and five brothers.

Fred Moss, 48, supervisor of the woolen experimental division of Whitin Machine Works, Whitinsville, Mass., died last month in a Worcester, Mass., hospital of injuries received in an automobile accident His stepmother, a brother and a sister survive.

Aaron B. Quinn, 48, an executive in the Greensboro, N. C., office of J. P. Stevens & Co., Inc., died last month of a heart attack. He was stricken while visiting a sister in Shelby, N. C., over the Thanksgiving holidays. He was executive assistant to W. J. Carter, Stevens vice-president and head of the Carter Fabrics operating division.

mill news

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

GREENVILLE, S. C.—The Brandon Corp. has recently let a $30,000 re-roofing contract to Daniel Construction Co. of Greenville and Birmingham, Ala. This project will include re-roofing of 59 mill village homes as well as various portions of the mill itself.

GREENVILLE, S. C. — Dunean Mills, a division of J. P. Stevens & Co., has awarded the contract to Daniel Construction Co. for the remodeling and renovation of its main offices in a separate building at the Greenville plant. The project is scheduled for completion early in January. It will include new private office facilities, rest rooms and lounges, a new lighting system and a new interior decoration scheme.

WALLACE, N. C.—Plans have been announced by J. P. Stevens & Co., Inc., for construction of a plant here to manufacture fabrics from synthetic yarns. The plant will cost several million dollars. The windowless, year-round air conditioned brick and steel structure will be constructed by C. M. Guest & Son, construction firm of Greensboro, N. C., from designs drawn by Charles C. Hartmann, Greensboro architect. It is estimated that the plant will employ about 300 persons with a weekly payroll of about $20,000. The Wallace plant will be a part of the Carter Fabrics operating group of the Stevens mills.

SUMMERVILLE, GA. — Bigelow-Sanford Carpet Co., Inc., New York, early this month announced that an agreement has been reached whereby Bigelow-Sanford will purchase Georgia Rug Mill, Inc. No change in personnel is contemplated, it is reported. A Bigelow-Sanford official stated that the Georgia plant is being acquired in a move toward product diversification in soft surface floor coverings.

SOUTH BOSTON, VA.—Open house was observed Dec. 5 at the local plant of the Carter Fabrics Division, J. P. Stevens & Co., Inc. The open house event served to celebrate the mill's safety record of having completed more than two million man-hours worked without a disabling accident. According to reports circulating during the event, the plant's tricot knitting machinery will be doubled in the near future. The plant now has 12 high-speed warp knitting machines on 168-inch nylon fabric, and one machine on 64-inch goods.

COLUMBUS, N. C. — Work has been started on the new $2,000,000 woolen mill here for Deering, Milliken & Co. and the plant is scheduled for completion about April 1.

HONEA PATH, S. C.—Preliminary work has been started on a modern 90,000 square foot synthetic weaving plant here for Westover Mills, Inc., a new corporation formed to erect the building. Contract for the construction work was awarded to Daniel Construction Co. of Greenville. Between 400 and 500 looms will be installed in the totally enclosed, air conditioned plant.

LIBERTY, S. C.—Potter-Shackleford Construction Co. of Greenville has been award-

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For almost half a century our products and our staff of experienced mill-trained representatives have contributed to profitable, efficient textile production.

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ed the contract for construction of a two-story weave-room addition to Liberty Plant No. 1 of Woodside Mills. The addition will cost about $55,000. The addition will take care primarily of increased warp preparation and will provide space for installation of 30 new looms.

BRISTOL, TENN.—A blue and white accident prevention flag has been awarded to employees of Bristol Weaving Plant, Burlington Mills Corp., by Liberty Mutual Insurance Co. for completion of one million man-hours without a lost-time accident. The record extended from Aug. 13, 1949, to Sept. 29, 1950. At recent ceremonies at the Bristol plant, Superintendent C. H. Sanders accepted the flag from Engineer Frank A. Walker of Liberty Mutual. Superintendent Sanders praised efforts of employees in achieving safety and Engineer Walker stated that the plant's record of only two lost-time accidents over an 11-year period was one that few plants could equal.

WALLACE, S. C.—The new Delta Finishing Co. Division of J. P. Stevens & Co., Inc., was welcomed to the state with a gala open house Dec. 19. Wallace is located on U. S. 1, two miles northeast of Cheraw. The event commemorated the virtual completion of one of America's most modern plants for the finishing of fabrics woven of cotton and synthetic fibers. The plant is one of three in the Delta Division, the other two being located at Attleboro, Mass., and Philadelphia, Pa. Located a short distance from the Pee Dee River, the plant proper consists of three buildings, the dyeing and finishing plant, the steam plant and the fiber plant. All of these buildings are of sturdy brick-steel construction. The over-all floor space in these buildings is approximately 250,000 square feet. The principal structure of the Delta plant is the dyeing and finishing building, which processes gray goods received from Southern weaving plants of the Stevens company. This building embraces more than 150,000 square feet of floor space, is artificially lighted and has forced filtered ventilation. Daniel Construction Co. of Greenville, general contractors on the job, delivered the plant ready for occupancy only 238 calendar days after ground breaking, despite bad weather and steel strikes. Design is by J. E. Sirrine Co., architects and engineers, also of Greenville. About a year ago the site on which the new modern finishing plant now stands was a typical South Carolina cotton field. All machinery in the plant is set up to dye and finish goods from the newest type of wide looms.

CORNELIUS, N. C.—The corporate name of Frank Ix & Sons Carolina Corp. has been changed to Frank Ix & Sons Sheraton Mills Corp.

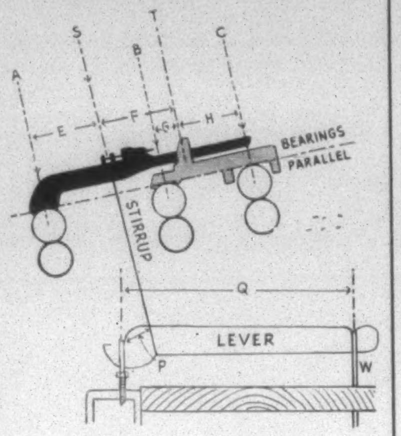
LAURENS, S. C.—A 17,000 square foot two-story warehouse is currently being built by Daniel Construction Co. of Greenville for Laurens Cotton Mill. This warehouse addition for all cotton and finished fabric is being built to add to existing facilities The two-story brick structure is reported to cost in excess of $50,000.

NEW ORLEANS, LA:—International Harvester Co. last month announced plans for construction of a $2,000,000 twine mill on a ten-acre Mississippi riverfront site. The mill will be of one-story construction containing about 224,000 square feet of floor space. A 6,000 square foot administration building also will be built.

STATESVILLE, N. C.—Statesville Narrow Fabrics Co., established here in 1937 for the production of cotton tapes, webbing and zipper tapes, is moving into its new plant

PROGRESS OF THE UNITED STATES RUBBER CO. PLANT AT SHELBYVILLE, TENN., is reviewed at the speakers' table during the Old Timer Club banquet given by the management last month. Facing the camera are, *left to right*: Drs. W. H. Avery and T. R. Ray, plant physicians for the past 17 years; A. H. Jackson, Jr., office manager at Shelbyville Mills; H. Gordon Smith, vice-president and general manager of the U. S. Rubber textile division and the principal speaker of the evening; A. B. Alexander, Jr., Shelbyville plant manager; and Prof. L. I. Mills, principal of the Shelbyville Mills School. Approximately 175 employees were present for the occasion. The Old Timer Club was organized last year with 159 members.

How to Check Weights on your Spinning Rolls



A, B and C — Pressures on Front, Middle and Back Rolls as shown above
E, F, G, and H — Distances shown measured in inches.
P — The perpendicular distance from stirrup to contact point at top of lever screw. When measuring, be sure rule is held so angle with stirrup is 90°
Q — The distance from contact point at top of lever screw to weight hook
T — The point of contact between saddles, as well as the pressure on the Back Saddle
S — The point of contact between stirrup and Front Saddle, as well as the pressure on the Front Saddle.
W — The weight on the lever in pounds.

Formulae for Figuring Weight on Rolls:
For Pressure on Front Saddle: (W)(Q) = S(P) Solve for S
For Pressure on Front Roll: (S)(F) = A(E+F) Solve for A
For Pressure on Back Saddle: (S)(E) = T(E+F) Solve for T
For Pressure on Middle Roll: (T)(H) = B(G+H) Solve for B
For Pressure on Back Roll: (T)(G) = C(G+H) Solve for C

DIXON suggests a careful Check of Weighting on all Rolls

The above weight ratio formulae are designed to help you to more complete and visual understanding of the many factors affecting good weighting and the proper functions of an ideal saddle assembly.

Cut out this diagram and formulae and keep for your future reference or we will send you reprints on request. If you encounter weighting problems which these formulae do not solve, send them to us for solution.

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here on Jackson Street. The new 42 by 132-foot building is of block and brick construction.

MAYSVILLE, GA. — Barbara Ann Yarn Mills, Inc., a newly-organized concern, has purchased Harrison Mills, Atlanta, and machinery from the Atlanta facility is being moved to Maysville and is being set up in the Fickett-Brown Building.

FINGERVILLE, S. C.—Construction of a $100,000 water and sewerage system at Franklin Process Spinning Mill, Inc., and mill village has been started and is expected to be completed next month.

GREENVILLE, S. C.—Silver dollars flowed through the normal channels of business in Greenville (pop. 57,932) when 2,200 employees of Judson Mills were paid in the shiny coins in a special promotion. The special weekly payroll distributed more than $125,000 through the 16 special pay stations throughout one of Greenville's largest textile plants, in a plan to dynamically demonstrate the effects of textile payrolls on Greenville's economy. Special arrangements were made with the Federal Reserve Board to have more than 7,500 pounds of the silver dollars shipped from the U. S. Government mint in Philadelphia. Special radio and newspaper advertising pointed to the event, while merchants over the city seized the opportunity to tie in normal advertising with the "Judson Silver Dollar Day." Several stores ran "specials" at reduced prices when purchased in silver dollars. Alan B. Sibley, vice-president of Judson Mills, considered "Operation Silver Dollar" quite a success. The general public was informed of the importance of textile payrolls through radio advertising. It was pointed out that Greenville, leading the 46 counties of South Carolina in manufacturing payrolls, depended on textiles for 93 per cent of the $52,544,093 annual payroll. Judson Mills account for approximately one-eighth of the textile payroll for the county.

GREENVILLE, S. C. — Maverick Mills' White Horse Mill, located on White Horse Pike in Greenville, has been promised for completion in the Spring by Daniel Construction Co., general contractors for this 200,000 square foot project. White Horse Mill is a complete bale to cloth cotton mill, one of only two such mills built in the South since the war. It will be equipped with 600 looms and all supporting equipment. Over-head unit drives will operate all spinning to allow free aisles for operating areas. Another unique feature of this mill is a full basement under the entire 200,000 square foot manufacturing area to provide warehouse and storage facilities. The first floor will be a suspended six-inch, reinforced concrete slab with complete piping, duct work and conduit space sleeved through the beams. The $3,000,000 mill will have structural steel roof decks with two-inch cork insulation and tar and gravel finish.

ABBEVILLE, S. C.—Abbeville Mills, division of Deering, Milliken & Co., has recently awarded contract for the $150,000 boiler plant to Daniel Construction Co. of Greenville, S. C. and Birmingham, Ala. The new boiler plant, in addition to existing facilities, will include a new Babcock and Wilcox boiler, complete facilities for its operation and piping for utilization of the steam. The addition to the boiler house will comprise some 2,000 square feet, with 45 foot high brick walls on a steel frame structure.

SHELBY, N. C.—A two-story, air conditioned addition to Dover Yarn Mills, Inc., is currently under way at Stubbs, five miles east of Shelby. The new building will accommodate machinery in an expansion that will cost approximately $200,000, doubling the size of the present facility.

ANNISTON, ALA. — The Alabama Secretary of State on Nov. 22 chartered Calhoun Ribbon Company "to manufacture narrow fabrics, ribbons, textile products, etc.," in Anniston. Capital, authorized and paid in, is shown as $50,000. Incorporators of the Calhoun firm are listed as M. T. Stark, Anita Stella Stark, L. H. Roberts and W. C. Classe.

TAYLORSVILLE, N. C.—Barger Construction Co. of Mooresville, N. C., was low bidder for construction of an addition to Schneider Mills here. Cost of the project was not revealed. Bibersten & Bowles, Charlotte, N. C., is architect-engineer for the project.

HENDERSONVILLE, N. C.—The industrial committee of the Hendersonville Chamber of Commerce early this month purchased a

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tract of land which is to be turned over to Belding, Heminway Co., Inc., for construction of a $2,000,000 textile thread plant.

Asheville, N. C. — A fire at Biltmore Spinning Co. recently caused damages estimated at $10,000. Supt. J. W. Roach said the fire started when sparks from a machine ignited cotton lint on the floor. The plant produces heavy grades of wool yarns and blends of wool and rayon.

Charleston, W. Va. — Production of the new fiber, Dynel, is being increased considerably by the Carbide & Carbon Chemicals Division of Union Carbide & Carbon Corp. An extension of the present plant here will enable the firm to double production by July, 1951, it is predicted.

Williamston, S. C.—Williamston Cloth Mills, originally Gossett Mills, which is now a unit of Textron Southern, will begin construction immediately on a $1,000,000 addition. New wings will be built by Daniel Construction Co., Greenville, S. C. Expansion will increase number of looms by more than 54 per cent and will add 27,840 square feet to existing mill building. There will be 11,808 additional spindles and 375 more looms.

Kinston, N. C.—A decision to use the Du Pont Co.'s 635-acre tract on the Neuse River, near Kinston, for the manufacture of a new synthetic textile fiber known tentatively as Fiber V, instead of nylon, has been announced. The tract was purchased in September. The Du Pont Co. said that the change in plans was dictated by several factors. First, extensive market studies have led to the conclusion that Fiber V should be put in commercial production as soon as possible. Second, it was decided that the additional nylon yarn capacity, planned originally for the Kinston project, can best be provided, under the present construction materials situation, through technological improvements in production facilities and expansion at existing nylon yarn plants at Seaford, Del., Martinsville, Va., and Chattanooga, Tenn. Design of the plant for Fiber V is under way and construction is expected to start sometime next year. Technically, the material is a condensation polymer obtained from ethylene glycol and terephthalic acid. It is not chemically related to nylon.

Anderson, S. C.—Haynsworth Mill at Anderson, S. C., has a 17,000 square foot warehouse under construction by the Daniel Construction Company of Greenville, S. C. and Birmingham, Ala. The 96 by 186 foot warehouse is an addition to the existing building. It is a one-story windowless structure with steel frame and jumbo brick curtain walls. The steel frame has been designed to permit further additions to the structure as needed. These may be either multiple story additions or additions of one floor on the existing level. The roof is of slab concrete construction covered with foam glass insulation and tar and gravel exterior finish. Completion is scheduled for the first of the year at which time the warehouse will be put into use for the storage of finished goods.

New York, N. Y.—A new and improved group insurance plan for employees went into effect Dec. 4 at a number of plants in the Carolinas of J. P. Stevens & Co., Inc. The new insurance program was made available to thousands of employees in the 12 plants of the Dunean group in the Greenville, S. C., area, at Slater (S. C.) Mfg. Co., and at the Stanley and Ragan, N. C., spinning divisions.

Tarboro, N. C. — Hart Cotton Mills, Inc., which has spent approximately $5,000,000 in the past five years in modernizing both the plant and mill village, observed open house Dec. 6. Visitors were taken through the modern plant which now produces 700,000 yards of print cloth fabrics each week, consuming 17,500 bales of cotton yearly.

Turnersburg, N. C.—A new building for Rocky Creek Mills, Inc., measuring 264 by 165 feet, is expected to be completed early in 1951. When the new facility is equipped and in operation, officials expect an increased production of about 40 per cent. The new building will house all the machinery for the manufacture of cotton yarn and the present structure will be used for cotton storage.

Rocky Mount, N. C. — Ground has been broken for an addition to Rocky Mount Rayon Mills which will double the size of the plant. The addition is scheduled to be completed in the early part of next Summer.

Davidson, N. C.—Palomino Mills, Inc., recently has added 2,736 spindles and now has a total of 16,760. The plant is operating on two full shifts at present.

Newberry, S. C.—Is is reported that limited production started in the middle of September in the new Kendall Mills gauze weaving plant, a subsidiary of Bauer & Black. This project, totaling more than half a million dollars, consists of a basement and four floors adding more than 100,000 square feet to the existing plant. This unit is equipped with new looms and complete cotton processing and spinning equipment to take care of every step from cotton bale to finished gauze bandages for use in Bauer & Black medical bandages. Daniel Construction Co. of Greenville, S. C. and Birmingham, Ala. are general contractors for the entire project which was completed nearly 30 days ahead of schedule. In addition to the mill extension, the project includes a considerable extension of the boiler house to make room for additional power plant equipment. This entire expansion program, including equipment, is reported to cost in the vicinity of one million dollars.

Shelby, N. C.—Dover Mill Co. entered a new field of cloth production recently with the installation of nine tricot knitting machines. The machines are producing knitted cloth 168 inches wide ranging from 15-denier sheer nylon net to 55-denier acetate jersey and other knitted material for women's wear. Twenty additional employees were hired to handle the new operations running on three shifts.

Providence, R. I.—Textron, Inc., recently announced plans for expanding its operations in Puerto Rico to include the finishing of gray goods it has been producing there for about a year. Textron Puerto Rico, a subsidiary, is negotiating for the expansion of its Ponce facilities so that the cotton fabrics produced in that plant can be dyed, printed and finished in Ponce for distribution to Puerto Rican garment manufacturers.

Lowell, N. C.—Peerless Spinning Corp. recently donated $2,000 to be used toward furthering the long-term building program of the Lowell Community Recreation Park.

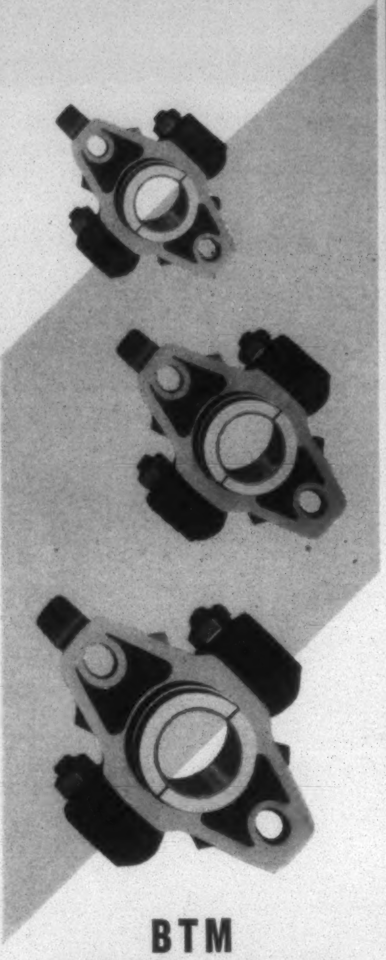
For The Textile Industry's Use

EQUIPMENT — SUPPLIES — LITERATURE

New Electronic Hygrometer

A new electronic hygrometer for measuring and controlling industrial and commercial air conditioning has been developed by Minneapolis-Honeywell Regulator Co. Field tests have proved that the new instrument adds to worker and machine efficiency, it was announced by Honeywell-Brown engineers. "The system includes a single-point ElectroniK recorder of a circular or strip chart type, with or without control and a small element which does away with the use of human hair," said Brown engineers. "The element makes use of gold leaf and a chemical salt solution that eliminates cleaning and other maintenance."

The company listed as advantages of the system its provision for direct relative humidity reading without assistance of psychrometric charts; its use for sensing changes between the limits of 20 and 93 per cent relative humidity; its minimum span of 20 per cent relative humidity throughout its 20 to 93 per cent range, and the availability of all ranges with full temperature compensation between the limits



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5 **COINED RACEWAYS** insure smoother operation through extra hardness. Improve with use!

6 **PRESSURE LUBRICATION** by Zerk Fittings reduces friction and wear!

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of 50° to 120° F. "The system's ability to provide remote reading provides three advantages, namely that it will operate over distances up to 1,000 feet, making possible centralized control of a complete installation from a supervisory panel," the engineers said. "Unit control is available to the critical zone being controlled. Remote transmission allows supervisory monitoring of multi-unit, single zone control.

"The instrument is calibrated to plus or minus one per cent accuracy, allowing relative humidity to be held within closer tolerances than previously possible. Responsiveness of the sensing element is much greater than dimensional change type hygrometers; 63 per cent of total change is registered in ten seconds. Minimum maintenance is featured due to complete filtration and elimination of psychrometric accessories. The sensing element is generally unaffected in corrosive atmospheres normally encountered in industrial working areas. This means more accurate measurement and closer humidity control. Installation is simplified, because due to water lines, wicks, porous tubes and accessories are eliminated. Centralization of instruments provides single location supervision over remotely located multi-zone measurements." Delivery of the new system is scheduled for February.

Selvage Marking Bulletin

Currently available from Milfa-Graph, Inc., Wilmington, Del., is an eight-page brochure describing the firm's Milford-Astor machine for accurately marking the selvage of any fabric from the sheerest to the heaviest overcoating. Any design or any colors may be used and it is said that canvas or leather belting, rubber products or coated products may be marked. Milford-Astor machines are manufactured by Milford-Astor, Ltd., Manchester, England. They are distributed exclusively in the U.S.A. by Milfa-Graph, Inc., an associate of Milford-Astor, Ltd., and Kaumagraph Co., Wilmington, Del.

Orr Slasher Cloth

Orr Felt & Blanket Co. of Piqua, Ohio, is now furnishing cotton textile mills a chemically treated slasher cloth. Slasher cloth is a low cost maintenance item, the company states, yet if it does not perform satisfactorily it can create many hidden costs and result in a considerable number of process problems. In order to prevent the occurrence of these problems, Orr's chemically treated slasher cloth was designed and processed to: (1) hold its dimensions while in use; (2) resist bacterial and heat degradation; and (3) start fast and wear longer.

The chemical treatment is an adoption of one of the several chemical treatments which Orr Felt & Blanket Co. has for the last five years been using on its paper maker felts, and is a resultant product of almost ten years of research and study. Oliver D. Landis, Inc., Charlotte, N. C., is distributor of Orr slasher cloths and P. W. Coleman of Greenville, S. C., is South Carolina representative.

Fiberglas Finishing Truck

When one checks into the advantages of molded Fiberglas, it is a simple thing to see the natural application of this new process to finishing trucks. Molded Fiberglas is moisture proof and impervious to oil, grease and most chemicals. It is really tough, extremely lightweight and can be permanently colored. All of these advantages are built into the new finishing Truck just announced by Westport Fibre Corp. of Westport, Mass.

These new trucks are of one-piece molded construction with reinforced angle iron frame imbedded in the Fiberglas. They have smooth, white inside finish with rounded corners. There are no bolts, screws or rivets to catch or tear cloth—no wood to splinter. These trucks are 6/10ths the weight of trucks made of conventional materials. Perforated bottom and available in three popular sizes; wide variety of casters available.

Alfco Pressurized Fire-Gun

American-LaFrance-Foamite Corp. of Elmira, N. Y., announces it has designed and placed on the market a completely new one-quart air pressurized fire extinguisher. It discharges vaporizing liquid fluid for extinguishing both flammable liquid and electrical type fires.

It aims and operates like a gun, with trigger-quick action. It hits the fire target accurately with no unnecessary loss of liquid. It requires no pumping. Simply aim and squeeze the trigger. It is easily recharged by simply pouring in more vaporizing liquid and can be pressurized with any standard air chuck as commonly used in gasoline service stations, or it can be pressurized with any ordinary tire pump.

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DECEMBER • 1950

CARD CLOTHING NEWS

and views

WRITTEN MONTHLY BY E. A. SNAPE, JR., PRESIDENT **Benjamin Booth Company** PHILA. PA.

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*Reg. in U. S. Pat. Off.

Thanks,

E. A. Snape, Jr.,

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President,

Benjamin Booth Company
Allegheny Ave. and Janney St.,
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Representative
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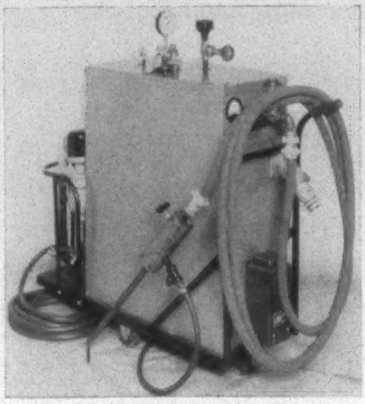
Speedylectric Loom Cleaner



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Similar in principle to the original JC30-LCS, the new unit is said to be equally effective, more compact, lighter and more easily maneuvered in close quarters. Requiring one-third less power than the JC30-LCS, this new Speedylectric loom cleaner can be plugged in at convenient locations in most mills without adding to present power lines. On 550-volts, three-phase, only 22 amps are needed for maximum output. High pressure, dry steam from the built-in Speedylectric boiler is delivered to the steam lance, and under finger-tip control of the operator, directed at high jet velocity against the gears, cams, dobby heads and frame of the loom to be cleaned. Where needed for cutting caked grease or waste accumulations, the operator can instantly apply a concentrated solvent or detergent, either alone or atomized with the steam at the jet.

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Uniform top quality from each and every peroxide bath is certain when you choose Star Silicate of Soda for your bleaching assistant. Star is that bright, clear silicate of high, constant purity, the same today and tomorrow as it has been always.

Leading mills rely on Star quality. Lack of uniformity in the alkaline content, for instance, can result in higher tensile strength losses, or the loss of full bleaching value from peroxide. Star's purity, clarity, stability, and proper reserve of alkalinity also save money.

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of 50° to 120° F. "The system's ability to provide remote reading provides three advantages, namely that it will operate over distances up to 1,000 feet, making possible centralized control of a complete installation from a supervisory panel," the engineers said. "Unit control is available to the critical zone being controlled. Remote transmission allows supervisory monitoring of multi-unit, single zone control.

"The instrument is calibrated to plus or minus one per cent accuracy, allowing relative humidity to be held within closer tolerances than previously possible. Responsiveness of the sensing element is much greater than dimensional change type hygrometers; 63 per cent of total change is registered in ten seconds. Minimum maintenance is featured due to complete filtration and elimination of psychrometric accessories. The sensing element is generally unaffected in corrosive atmospheres normally encountered in industrial working areas. This means more accurate measurement and closer humidity control. Installation is simplified, because due to water lines, wicks, porous tubes and accessories are eliminated. Centralization of instruments provides single location supervision over remotely located multi-zone measurements." Delivery of the new system is scheduled for February.

Selvage Marking Bulletin

Currently available from Milfa-Graph, Inc., Wilmington, Del., is an eight-page brochure describing the firm's Milford-Astor machine for accurately marking the selvage of any fabric from the sheerest to the heaviest overcoating. Any design or any colors may be used and it is said that canvas or leather belting, rubber products or coated products may be marked. Milford-Astor machines are manufactured by Milford-Astor, Ltd., Manchester, England. They are distributed exclusively in the U.S.A. by Milfa-Graph, Inc., an associate of Milford-Astor, Ltd., and Kaumagraph Co., Wilmington, Del.

Orr Slasher Cloth

Orr Felt & Blanket Co. of Piqua, Ohio, is now furnishing cotton textile mills a chemically treated slasher cloth. Slasher cloth is a low cost maintenance item, the company states, yet if it does not perform satisfactorily it can create many hidden costs and result in a considerable number of process problems. In order to prevent the occurrence of these problems, Orr's chemically treated slasher cloth was designed and processed to: (1) hold its dimensions while in use; (2) resist bacterial and heat degradation; and (3) start fast and wear longer.

The chemical treatment is an adoption of one of the several chemical treatments which Orr Felt & Blanket Co. has for the last five years been using on its paper maker felts, and is a resultant product of almost ten years of research and study. Oliver D. Landis, Inc., Charlotte, N. C., is distributor of Orr slasher cloths and P. W. Coleman of Greenville, S. C., is South Carolina representative.

Fiberglas Finishing Truck

When one checks into the advantages of molded Fiberglas, it is a simple thing to see the natural application of this new process to finishing trucks. Molded Fiberglas is moisture proof and impervious to oil, grease and most chemicals. It is really tough, extremely lightweight and can be permanently colored. All of these advantages are built into the new finishing Truck just announced by Westport Fibre Corp. of Westport, Mass.

These new trucks are of one-piece molded construction with reinforced angle iron frame imbedded in the Fiberglas. They have smooth, white inside finish with rounded corners. There are no bolts, screws or rivets to catch or tear cloth—no wood to splinter. These trucks are 6/10ths the weight of trucks made of conventional materials. Perforated bottom and available in three popular sizes; wide variety of casters available.

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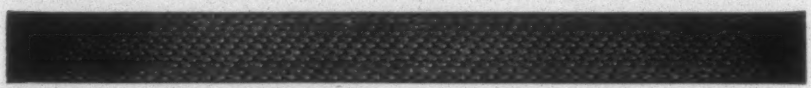

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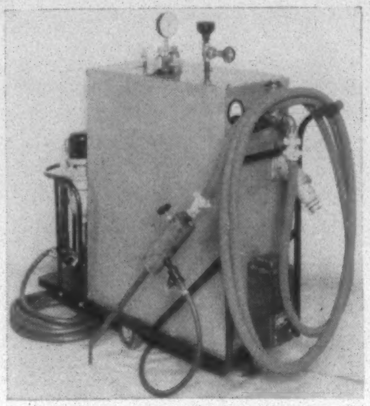

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and effective solution of most static problems and are prepared to give personal attention to any inquiries regarding static and will work in close co-operation with Chapman engineers.

Butterworth Sells Plant

H. W. Butterworth Sons & Co., Philadelphia, Pa., manufacturer of textile machinery, announced it has sold its Philadelphia plant and will complete removal to its plant in Bethayres, Pa., in March. Executive offices also will be removed there. When a new machine shop is completed in Bethayres, all production will have been centralized. Butterworth is understood to have gotten $200,000 for its Philadelphia plant.

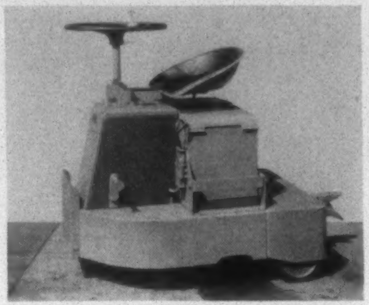
New Acme Steel Magazine

Just off the presses is the first issue of *Confab,* Acme Steel's quarterly magazine for users of strip steel products. The new publication, with a circulation of 70,000, replaces *Process News,* which dealt with protection of shipments in transit. As President Carl J. Sharp explains in an introductory editorial, the word Confab was selected since it suggests a "friendly chat and meeting of minds." The purpose of the magazine will be to set up a "long-distance interchange of ideas between Acme Steel and our many friends." It will contain interesting items and successful customer "applications of our methods and our products." Copies of this publication can be obtained without charge from the Advertising and Sales Promotion Department, Acme Steel Co., 2840 Archer Avenue, Chicago 8, Ill.

Textile Tape Bulletin

A new booklet describing uses for Scotch brand textile tapes was announced in November by Minnesota Mfg. Co., St. Paul, Minn. It is available on request. Entitled "Scotch Brand Textile Tapes in Action," the new booklet provides 26 pages of case histories and technical data on proven uses for pressure-sensitive tape in the textile industry. Taping techniques are described and pictured for such uses as holding yarn ends on a creel; holding ends of warp threads; holding warp thread ends after slashing; correcting jacquard pattern cards; splicing fabrics of all descriptions; and, marking defects during cloth inspection. The booklet also shows how the tapes can be used for sealing, packaging, and securing cartons and containers for shipment. In addition, new filament tapes for extra heavy-duty packaging are pictured and described.

Marforge Load-Mobile



The Load-Mobile tractor manufactured by Market Forge Co. of Everett, Mass., is proving highly efficient and economical for hauling trailers in either single or multiple loads. Because it is the shortest type tractor available, only 44 inches long, the Marforge Load-Mobile is especially adaptable to smaller plants where space is at a premium. The tractor is also useful in doing other jobs such as lifting loads by rope and tackle and hauling other types of equipment.

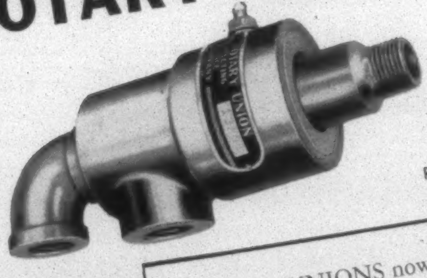
It features three-way operating positions and may be driven in any one of the following ways: (1) the operator facing away from the load he is hauling, (2) the operator facing the load for narrow passages, and (3) riding on the step provided for easy access on and off the truck. This is convenient for short hauls.

The tractor can be furnished with practically any type of tractor hitch, automatic or manually operated. Exact specifications are: Models—3000 and 5000 capacity; draw bar pull, 500 to 800 pounds; no load speed, 3.5 to four miles per hour; full load speed, 2.5 to three miles per hour; over-all length, 44 inches; over-all width, 30 inches.

Floormaster Bulletin

The most recent brochure in a series of up to date literature being issued by Lewis-Shepard Products, Inc., is Bulletin No. 29 covering Floormaster trucks. This new 16-page bulletin illustrates and describes the standard line of two-wheel and four-wheel trucks commonly used by industry, warehouses and trucking companies. A large number of illustrations are devoted to trucks that vary only slightly from standard to those that are completely special. A copy of Bulletin No. 29 can be secured by writing to Lewis-Shepard Products, Inc., 257 Walnut Street, Watertown, Mass.

Thermoid Co., Trenton, N. J., recently made available a concise, technical bulletin on flat transmission belting as an aid to plant engineers and operating personnel in selecting the right transmission belt to meet their individual problems. The bulletin contains complete formulae, charts, and tables for the proper selection of transmission belting. Copies of the new transmission belting bulletin, Form No. 3687, are available on request.



ROTARY UNIONS*

Type "S"
ROTARY UNION

ROTARY UNIONS now adopted as standard equipment by 8 leading textile machinery manufacturers . . . . and many more manufacturers and mill men, after seeing ROTARY UNIONS in action at the Greenville Textile Show, are making tests with the intention of adopting them as standard equipment.

Standard ROTARY UNIONS are guaranteed to give complete satisfaction on slashers, calenders, dry cans, and Sanforizing machines with steam pressure up to 150 lb., without leakage. Low friction prevents stretching of warps.

*Trade Name

"WHERE Good Connections COUNT"

PERFECTING SERVICE COMPANY
332 Atando Ave. (Home Office and Factory) Charlotte, N. C.
Offices in Jersey City — Chicago — Philadelphia — Cleveland — Pawtucket, R. I.

Serving The Textile Industry

Todd-Long Picker Apron Co.

By DAVID CLARK, Editor

THE TODD-LONG PICKER APRON CO. of Gastonia, N. C. was organized in 1929 as F. C. Todd, Inc. In 1946 it was bought by Truett Long and his brother, Will Long, who is now superintendent of the Barbet Mills at Lexington, N. C. In 1948 Truett Long bought his brother's interest.

Truett Long (pictured at *left*) was a grocer who found the long hours of a grocery store rather injurious to his health and looked around for a business which was more to his liking. He made a success of his new business, and now has a new building on East 2nd Ave. in Gastonia and it is equipped with the latest and most efficient machinery for the manufacture and repair of picker aprons.

His sales organization covers the Carolinas, Virginia, Georgia, Alabama and Tennessee.

The Todd-Long Picker Apron Co. operates a saw mill in the mountains and cuts boards from gum, maple, beech and birch. The boards cut by the saw mill are shipped to Gastonia and before being cut into apron strips are air dried and carefully graded.

Believe it or not, this firm manufactures and repairs 171 different types of aprons. While I was in the plant they were manufacturing an apron 87 inches wide. They also make both Kirschner and bladed beaters.

In order to handle the many types of aprons the firm is forced to keep a very large stock of canvas and leather and use only the highest quality of both and also a very large supply of copper rivets. They handle only W. H. Bagshaw beater lags of all types for waste machines, Kirschner beaters, etc.

The Todd-Long Picker Apron Co. has a 50 by 160-foot building and the machinery is modern and it was easy to see that here was the "know-how" when it comes to picker aprons. Because Todd-Long has established a reputation for good service and high quality of output, it does a large business with Southern mills and also a very substantial business with mills in New England and Canada.

Todd-Long Picker Apron Co.

Todd-Smith Banding Co.

Todd-Smith Banding Co.

TODD-SMITH BANDING CO., located at 719 East 2nd Ave., Gastonia, N. C., is now owned and operated by W. Lee Smith, a former superintendent of the Woodlawn Plant of the American Yarn & Processing Co. at Mt. Holly, N. C. Some time ago he acquired the interest of F. C. Todd. Mr. Smith brought to the business a long experience in the manufacture of coarse yarns and has 348 speeder spindles for the manufacture of speeder spun yarns. Somethimes he manufactures surplus yarns for the market.

I had an idea that spinning and twister bands were all manufactured from short, low-grade cotton but based upon his long experience in cotton mills Mr. Smith decided to make the strongest bands possible and uses nothing but $1\frac{3}{16}$-inch cotton.

There are many different types and lengths of bands. Some are made for splicing while others are designed to be put together with hooks. Some of the bands have their ends dipped in wax. They have 24 band machines, many of them automatic, and also have two tape looms. Yarns for the tape looms are purchased.

J. R. Collins handles the sales in the nearby area and a large volume of bands are sold through mill supply houses. The firm has a well-constructed, two-story building and under the efficient management of W. Lee Smith is producing a large volume of high strength and high quality bands.

N.C. State Textile School Conclave

Almost 200 former students of the North Carolina State College School of Textiles attended their first annual alumni conclave at Raleigh Nov. 17-18, and were brought up to date on the school's various activities and projects, and heard technical discussions applicable to mill operations.

At the first session Dean Malcolm E. Campbell expressed appreciation for the "magnificent" support provided to the school by the General Assembly and the North Carolina Textile Foundation, Inc. The foundation is currently supplementing the state salary scale in attracting leading scientists and educators for assignments in the School of Textiles. The state legislature, Dean Campbell reported, has appropriated approximately $1,000,000 for permanent improvements at the School of Textiles during the last four years. Furthermore, he said, the foundation now has resources of around $1,200,000.

Dean Campbell said that the school now has an enrollment of 612 full-time students, most of whom are natives of North Carolina. He said that the student body includes representatives from about 25 states in the United States and from 23 foreign countries. The 249 seniors who were graduated from the School of Textiles last June, have all found employment, and the demand for additional graduates in this field of study, he said, is still strong. He expressed the belief that another 100 graduates could find employment in a matter of hours. A strong demand for graduates, the textile dean said, will continue with attractive economic opportunities open in all branches of the textile industry.

Dr. Thomas Nelson, dean emeritus and founder of the School of Textiles at the college, was recognized at the opening session of the conclave and was given a stirring ovation.

Prof. E. B. Grover, head of the school's yarn manufacturing department, also spoke at the opening session of the conclave. His topic was "Fiber Blending."

The second session featured presentation by Prof. Henry Rutherford, head of the textile chemistry and dyeing department, of the paper, "Comparative Dyeing Characteristics of Irrigated and Rain-Grown Cottons." This paper, which has received wide acclaim since it won first prize for the Piedmont Section in the intersectional contest at the recent convention of the American Association of Textile Chemists and Colorists, was abstracted in the October issue of this magazine.

A description of the new textile instrumentation course at the school was provided by Clarence M. Asbill, Jr., professor of textile machine design and development. The school has managed to secure representative types of all automatic and non-automatic devices now used in the textile industry, and undergraduates are given a chance to acquaint themselves with their function and operation.

An alumnus who is now general superintendent of the Rhodhiss (N. C.) Division of Pacific Mills, Joe C. Cobb, described the utilization of the Pacific converter at his plant. In three years' use of converters the mill had experienced no filling bands nor broken-out rolls or roll changeovers;

WHEN ABBOTT MACHINE CO. OPENED ITS NEW SOUTHERN HEADQUARTERS AT GREENVILLE, S. C., this Fall during Southern Textile Exposition week, the firm was host at a buffet dinner; many of the guests are shown in the pictures at *top left and right and lower left.* In the other scene is after-dinner dancing to the music of Eddie Condon's orchestra, flown from New York City especially for the Abbott opening. In black dress is Mrs. L. S. Ligon, Jr., daughter-in-law of the firm's Southern manager; her partner is S. L. Abbott, president of the company. In the white evening dress is Miss Helen Ligon, daughter of L. S. Ligon; her partner is Carl Chalmers of Texize Chemical Co. In the background are Abbott personnel who are working in and out of the Greenville office.

Rhodhiss, he said, is using converters essentially with the American spinning system on viscose, acetate and nylon, blends of these and combinations with wool. The machine also will handle glass fibers satisfactorily, he said.

In running a 50-50 blend of viscose and acetate, the plant uses several tows, totaling one million denier each fiber, into the converter. After a three-inch cut, drafting to 250 grains per yard and tinting, stock is processed through a sliver lap machine, producing 20-inch laps of 31 each. Flattop cards produce 60-grain sliver, Mr. Cobb related, followed by two drawing operations with finished 55-grain sliver, then to conventional long-draft slubbers.

Answering questions from the floor, Mr. Cobb felt that price differentials—about three cents a pound for viscose and four cents for acetate, over staple costs—favored the converter method. The machine, he said, costs "only a fraction of" opening, picking and blending machinery it replaced. Mr. Cobb reported that in spinning certain yarns, rate of ends down was less than 15 per thousand spindle hours, running approximately 145 to 160 r.p.m.

Rayon producers are "definitely making preparations" to increase tow production, it was noted. Better results were obtained with mechanically-crimped than crimp-set nylon, and in processing nylon a fancy was used on cards with conventional-type card clothing. Also, he expressed preference of carton-packed viscose tow over acetate packing on card tubes. With the converter, Mr. Cobb observed, control of percentages and quality of blends is "very good."

A technical service representative of the National Cotton Council of America and also a recent graduate of N. C. State, G. Dent Mangum, told of research experiments now under way to increase consumption and lower the cost of manufacturing cotton. He was followed by G. H. Dunlap, director of the school's placement bureau, who told of methods used to direct graduates to the most appropriate employment. A buffet supper Friday night featured a humorous address by W. E. Debnam, radio commentator of Raleigh. This was preceded by a social hour, with the staff of TEXTILE BULLETIN being host.

The final session Saturday morning heard about tests, made as part of a study sponsored by the Department of Agriculture, which indicate that raising the neps revealed that by raising the speed of card lickerins to 800, a marked improvement in yarn resulted. Reporting on some of the developments gained in analyzing nep causes, J. F. Bogdan, textile research technologist, believed these tangled fibers were made by "rolling action" in ginning and subsequent operations. When cards are allowed to load and card clothing becomes dull, curling fibers will be caused, he observed. Closer settings on cards, said Mr. Bogdan, also are beneficial. Opening machines, he commented, will need improving if a large percentage of neps are to be prevented. He favored machinery that opened cotton "quickly."

The closing address was made by W. D. Carmichael, comptroller of the Greater University of North Carolina. Reviewing progress made at the college during the last decade, Mr. Carmichael predicted that the institution is now faced with "its greatest period of development." He said that the new nuclear reactor, which will soon be built on the campus, alone may lend to significant advances for mankind;

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the reactor, first such laboratory to be erected outside of the restricted areas of the Atomic Energy Commission, will be devoted entirely to the harnessing of the atom for peaceful purposes, he stated. Mr. Carmichael pointed out that a textile organization, Burlington Mills, contributed funds necessary for the erection of the building to house the reactor and that the college will finance the construction of the reactor itself. It will be a $300,000 project.

Credit for arranging the conclave program was given by Dean Campbell to Prof. Benjamin L. Whittier, head of the school's weaving department, and those present agreed unanimously to continue the event from year to year.

Blumenthal Heads Textile Research Institute

Andre Blumenthal, vice-president of Sidney Blumenthal & Co., Inc., was named president of the Textile Research Institute at the 21st annual meeting of the group last month in New York City. Mr. Blumenthal succeeds A. G. Ashcroft, director of research for Alexander Smith & Sons Carpet Co., president of the institute for the past two years. Other new institute officers are H. Gordon Smith, vice-president and general manager of the textile division, U. S. Rubber Co., vice-president; Richard Kropf, vice-president of Belding Heminway Co., Inc., treasurer; and Paul Alford, secretary.

Newly-elected members of the board of directors are Charles S. Fowler, assistant to the president of Dan River Mills; P. S. Howe, Jr., director and president of American Thread Co.; and F. Everett Nutter, director and vice-president of Goodall-Sanford, Inc.

Business and technical sessions of the three-day event were held Nov. 16-17 at the Waldorf Astoria Hotel in New York City; on Nov. 18 members traveled to Princeton, N. J., for an open house celebration at the institute's laboratories in that city.

In his remarks as retiring president of the institute, Mr. Ashcroft stated, in part: "We begin to see clearly that out of the chaos of two world wars is evolving, slowly but inexorably, a new pattern of force, a new set of rules of industrial, political and economic process. We are playing in a new game. The rules have changed in these 21 years, the signals are new, and the plays faster; there are different players and functions, and research is throwing forward passes that are gaining equal ground with old running plays. You and I, all the people of this world, our country as the strongest grouped force for world peace, the American industrial system and the scientists and executives of the textile industry, all are involved without choice in this new pattern of forces. We who represent science and management in this broad textile industry are emerging, with almost explosive force, into a new age—an age of research as a force in executive planning; in short, a dynamic research era.

"It should be clear from the progress that has already been made and from the need which now exists for a dynamic program of research within units of the textile industry and collaboratively and through joint support of fundamental research that the Textile Research Institute must play a new and enlarged part in this new era. To play this part requires a larger area of financial support through membership dues, through projects, through fellowship support, and through contributions to the capital fund. It is my hope that each member will recognize the part he must play and will become a missionary for an enlarged and broader support from all firms in the textile industry and particularly from those who are not now participating in this fundamental research effort."

A number of speakers from various segments of the industry were heard at the technical sessions. On the opening day of the event those heard were E. R. Schwarz, professor of textile technology at the Massachusetts Institute of Technology, who discussed "Certain Aspects of Yarn Structure;" Harold J. Walter, president of Bachmann Uxbridge Worsted Corp., "Dyeing Under High Temperatures;" William E. Morton, professor of textile technology at Manchester (England) College of Technology, "The Spinning Value of Raw Cotton;" J. B. Speakman, professor of textile industries, Leeds (England) University, "The Plasticity of Wool;" G. H. Fremon of Carbide & Chemicals Division, Union Carbide & Carbon Corp., "The Copper Technique for Dyeing Acrylonitrile Fibers;" Helmut Wakeham of Textile Research Institute, "Strength and Weakness in Cotton Fibers;" and L. W. Rainard of Alexander Smith & Sons Carpet Co.,

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"Product and Process Changes as Related to Fiber Crimp."

"The Current Program to Improve the Performance of Fabrics from Synthetic Fibers" was discussed by Julius B. Goldberg, director of research, J. P. Stevens & Co., Inc.; while Giles E. Hopkins of the Wool Bureau considered "The Current Program to Improve the Performance of Fabrics of Natural Fibers." George P. Fulton, research director of the National Institute of Cleaning & Dyeing, spoke to the research experts on "The Serviceability of the Newer Fabrics in Drycleaning." Floyd W. Jefferson, a veteran of 41 years in Worth Street and chairman of the board of Iselin-Jefferson Co., Inc., outlined the history of a number of textile fibers in an amusing and thought-provoking manner "From Adam to Atom."

Hall Is 'Gossett' Lecturer At N.C. State

"Let us again take stock of those intangible things which make us a great people here in America," R. Dave Hall, Belmont, N. C., textile executive and former State commander of the American Legion, declared in an address at the N. C. State College School of Textiles Nov. 21. Mr. Hall, former president of the North Carolina Cotton Manufacturers Association and a present member of the State Employment Security Commission, spoke to an audience of approximately 500 persons in the auditorium of the college's school of textiles.

Continuing his remarks, Mr. Hall said: "We boast of a land where the rail splitter or the haberdashery merchant of yesterday may be the nation's president tomorrow, and we can well be proud of that fact. It is an evidence of the brand of political freedom which we enjoy.

"But more important is the fact that the bicycle mechanic of yesterday can become the automobile producer of tomorrow; that a steel puddler may become a steel king; that the clerk in a store can own his own chain of stores in the years ahead; that the boy running cards today may be running the mill tomorrow. Only by preserving that freedom—the freedom of opportunity—can we preserve those other freedoms which are ours."

Pointing out that members of his audience may soon be called to active duty in the nation's armed services to defend "our American way of life," Hall expressed the conviction that the preservation of the democratic processes will depend upon more than military strength. He said:

"It is possible to defend our way of life with guns and tanks and ships and planes, but unfortunately, it cannot be preserved with these impliments of destruction. Freedom and justice and liberty and opportunity, and all of those intangible things which, taken together, we call America, can only be preserved within the heart and life of the people who make up this nation.

"They can only be preserved by our people realizing before it is too late what other millions have realized after it was too late; that once you have bartered these things away, regardless of what they were bartered for, they can never be regained. Regardless then of whether the battle is fought with bombs and bullets or simply with ballots, ideas, and propaganda, the results can be the same if in the end we lose our American way of life."

Referring to the textile industry, the Belmont industrialist said that the industry will always afford opportunities

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for the small manufacturer, who is able to fill "a place in the trade's demand that can never be met by the larger, less mobile, integrated operation" and that the industry provides specialization for those who wish to take training for this type of activity.

He cautioned the students that hard work is one of the prerequisites for success in the textile business and outlined the recent advances in the synthetic fibers as an indication that the industry has no place for those who are "complacent and self-satisfied."

"Even greater changes," Mr. Hall said, "are destined to take place in your generation, and those broader horizons hold out for you an interest which should be big enough to challange the imagination of you all." Mr. Hall's address was presented as a part of the "B. B. Gossett Lecture Series" now in progress at N. C. State College School of Textiles.

Lowenstein Gives $25,000 To Clemson

Leon Lowenstein, chairman of the board of M. Lowenstein & Sons, Inc., on behalf of his company, Dec. 7 turned over to Dr. R. F. Poole, president of Clemson College, a check in the sum of $25,000 as a much-needed contribution towards equipping the textile building on the campus of the college, located at Clemson, S. C., with the most modern textile machinery.

Leon Lowenstein *(right)*, chairman of the board of M. Lowenstein & Sons, Inc., presents to Dr. R. F. Poole, president of Clemson College, a check for $25,000. This is a contribution towards equipping the textile building on the South Carolina campus with the most modern textile machinery.

Mr. Lowenstein, in his remarks to Dr. Poole, pointed out the great change in the textile industry since his early association with it, when it was a rarity for a person connected with a textile plant to be a college graduate. Mr. Lowenstein pointed out that today not only are textile executives graduates of institutions of higher learning, but many of the personnel in various categories are also college graduates. Mr. Lowenstein stressed the close relationship between the Lowenstein organization and Clemson College and noted that many of the executives of the Lowenstein plants are graduates of the college. He likewise commended Clemson on its program of stressing liberal education at the same time as furnishing technical skills.

Chemstrand Corp. May Produce Nylon Yarn

Osborne Bezanson of St. Louis, Mo., president of Chemtrand Corp., confirmed Nov. 16 that his company is negotiating a license agreement with E. I. du Pont de Nemours & Co. for the manufacture and sale of nylon yarn. The Chemstrand Corp. would be the first company in America, other than the Du Pont Co., to produce nylon.

The Chemstrand Corp. is owned jointly by American Viscose Corp. and Monsanto Chemical Co. It was formed over a year ago for research and development work in the field of synthetic fibers and only last month announced plans for the construction of a multi-million dollar plant at Decatur, Ala., for the production of its new synthetic acrylic fiber, described as "an American fiber, conceived for American living."

The Chemstrand Corp. would have the opportunity of offering not only its new acrylic fiber to mills throughout the nation, but would also be in a position to supply nylon.

Mr. Bezanson was recently elected president of Chemstrand. Prior to this he had been vice-president, member of the board and member of the executive committee of Monsanto Chemical Co. Other Chemstrand officers are Dr. Charles S. Venable of Philadelphia, who is vice-president of Chemstrand and director of chemical research for American Viscose Corp., and E. William Koster of Philadelphia, also of American Viscose Corp., who is secretary-treasurer of Chemstrand.

A.C.M.I. Is Streamlining Activities

A number of administrative changes aimed at streamlining the activities and operations of the American Cotton Manufacturers Institute have been recommended by a special committee appointed for that purpose and will be put into effect shortly, according to an announcement Dec. 14 by George P. Swift, president.

Mr. Swift explained that at a recent meeting of the board of directors a special committee consisting of Ellison S. McKissick, president, Alice Mfg. Co., Easley, S. C., and first A.C.M.I. president; H. K. Hallett, divisional vice-president, Kendall Mills, Charlotte, N. C.; Percy S. Howe, Jr., president, American Thread Co., New York City; Charles C. Hertwig, president, Bibb Mfg. Co., Macon, Ga.; William H. Ruffin, president, Erwin Mills, Durham, N. C., and T. D. Russell, president, Russell Mfg. Co., Alexander City, Ala., was named to make a study of the operations of the institute and recommend any steps they deemed advis-

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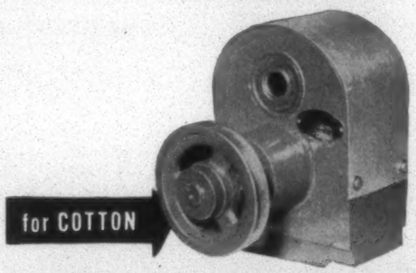

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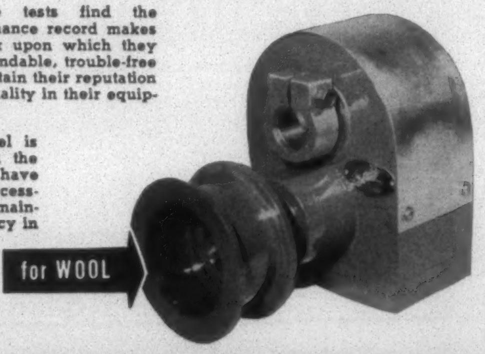

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able that would make for more efficient and economical operation of the organization.

As a result of this study and consequent recommendations, the statistical division will be moved from New York to the main office at Charlotte, N. C. The division's activities will be stepped-up and it is planned to broaden the statistical coverage of the industry.

Dr. C. T. Murchison, economic advisor, will make his headquarters in the A.C.M.I. Washington office beginning late next month. Dr. Murchison was president of the Cotton-Textile Institute from 1935 until its dissolution in 1949. Paul B. Halstead, statistical division head, will be retired as of March 1, 1951. Mr. Halstead was formerly secretary-treasurer of the Cotton-Textile Institute.

John W. Murray has been named head of the New York office. He will continue as secretary-trasurer of the Textile Export Association and as editorial director of the A.C.M.I. but will sever his connections with the National Cotton Council, of which he is editorial director, as of Jan. 1, 1951.

Mr. Swift praised the work of the committee and added that their recommendations would greatly improve the efficiency of the institute. He pointed out that ever since the institute was organized on Oct. 1, 1949, the board has been engaged in analyzing its functions, improving its services and broadening its activities.

Wool Bureau Expands Program For 1951-52

The Wool Bureau, Inc., internationally sponsored organization for maintaining and increasing the use of wool in apparel, Nov. 21 adopted a widely expanded program of research, education and advertising for 1951-52 and elected F. Eugene Ackerman, well-known textile consultant, as its president. Mr. Ackerman has been acting in a consulting capacity as chairman of the executive committee of the bureau since its organization in 1949. Reginald G. Lund, chairman of the International Wool Secretariat, and a director of the Wool Bureau, was elected chairman of the executive committee to succeed Mr. Ackerman. J. Byron Wilson of McKinley, Wyo., secretary of the Wyoming Wool Growers Association and vice-president of the American Wool Council, was elected to the executive committee.

The Wool Bureau is an amalgamation of the International Wool Secretariat, representing the wool growers of the British Dominions, and the American Wool Council, representing American wool growing, wool trade and wool textile interests.

Mr. Ackerman, who took office Dec. 1, will devote himself entirely to administering the enlarged program of the bureau. One phase of this program contemplates the establishment of a branch office devoted to operations in the Western Coastal and Mountain States. Another phase of the enlarged program is the closer integration of the operations of the European offices of the International Wool Secretariat in London, Paris, Rome, Brussels, Belgium and the Scandinavian countries with the Wool Bureau. Mr. Ackerman will leave next April for an extended survey of these offices in an effort to correlate all of the scientific, utility and fashion information with respect to wool that is of interest and value to the wool trades, the fashion industries, and the public of the United States.

Giles E. Hopkins, technical director of the Wool Bureau, left by plane for Europe Nov. 26 to visit offices of the International Wool Secretariat, laboratories and mills in Great Britain and on the Continent. He conferred in London with

Dr. E. G. Carter, director of the scientific and technical department of the International Wool Secretariat, on wool and textile research being carried on in the United Kingdom. Mr. Hopkins' trip was undertaken as part of the Wool Bureau's expanded program for 1951-52, in order to correlate the work being carried on abroad with that in the United States and to provide for an exchange of views on technical developments.

A.A.T.C.C. Unit Re-Elects H. G. Smith

H. Gillespie Smith of the Calco Chemical Division of American Cyanamid Co., Atlanta, Ga., was re-elected chairman of the Southeastern Section of the American Association of Textile Chemists & Colorists at the group's final meeting of the year Dec. 9 at the Georgia Institute of Technology, Atlanta. S. Jack Davis of the research division of Callaway Mills Co., LaGrange, Ga., was re-elected vice-chairman; Herman A. Dickert, director of the A. French Textile School, Georgia Tech, was elected secretary, and T. Howard McCamy of Pepperell Mfg. Co., Lindale, Ga., was elected treasurer.

A. Kempton Haynes of Rohm & Haas Co., Atlanta, was re-elected councilor and Russell Gill of Southern Sizing Co., Atlanta, was selected for the second council post. Sectional committeemen elected are David Barnes of Arnold Hoffman Co., Atlanta; Robert W. Price of the Opelika (Ala.) Division, Pepperell Mfg. Co.; J. W. Swiney of Fulton Bag & Cotton Mills, Atlanta; and Richard Hudson, Jr., of the research division of West Point Mfg. Co., Shawmut, Ala.

Following the dinner and business session, Dr. R. F. Nickerson of Monsanto Chemical Co. addressed the group on "Some Recent Findings in Applied and Pure Textile Research." His talk was illustrated by means of a series of slides.

The next regular meeting of the Southeastern Section will be held Feb. 23 at the Purefoy Hotel, Talladega, Ala. The meeting will feature a symposium on the various continuous methods of vat dyeing. It was decided to again hold the annual Summer outing, and June 15-16 was selected as the date. The site for the outing will be announced later.

D.O. Regulation Clarified By A.C.M.I.

The American Cotton Manufacturers Institute in a special bulletin to members points out that textile manufacturers without specific authority, other than the general provision of N.P.A. Regulation No. 2, may automatically extend the D.O. ratings on orders to the purchase of chemicals, packaging materials or other items such as yarns, rayon fiber, etc., provided the items sought are "physically incorporated in the material."

Authority for this is contained in Par. 11.5 of N.P.A. Regulation No. 2 which states that "When a person has received a rated order for the delivery of material, he may

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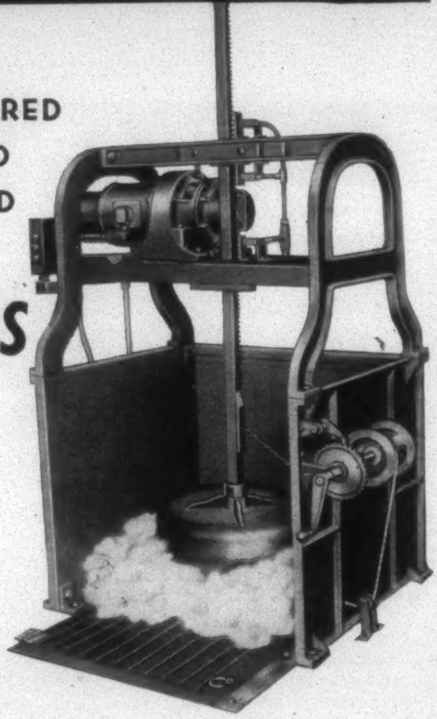

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extend it to get the material which he will deliver on that order, or which will be physically incorporated in the material which he will deliver, including containers and packaging materials required to make the delivery, and including also chemicals directly used in the production of the material. If the material is to be procured, this includes the portion of it which would normally be consumed or converted into scrap or by-products in the course of processing."

It appears definite, however, according to the A.C.M.I. that a textile manufacturer is not eligible to extend a D.O. rating to the purchase of capital equipment unless authorized to do so. The bulletin points out that Par. 11.6 of N.P.A. Regulation No. 2 specifically prohibits the extension of D.O. ratings to "get material for plant improvement, expansion, or construction, or to get machine tools or other items which he will carry as capital equipment, or to get maintenance, repair or operating supplies."

However, if a textile manufacturer, in order to fulfill a military contract, needs additional equipment or supplies, he may apply directly to the procurement agency which originated the rated order for authority to apply a D.O.-98 rating in that particular instance.

The D.O.-98 rating is one which procurement agencies are authorized to grant on an individual order basis. The procurement agency, in determining whether or not a manufacturer will be allowed to use a D.O.-98 is subject to two criteria: (1) there must be a determination that the contractor is using his existing equipment to the fullest practical extent to perform on rated orders, and (2) that the contractor has exhausted all reasonable efforts to obtain new or used equipment on an unrated basis.

The A.C.M.I. bulletin explains its interpretation constitutes an answer to numerous inquiries from members following publication Nov. 21 in Federal Register of an order issued by the Department of Defense entitled "Munitions Board Delegation of D.O. Rating Authority No. 1." Most inquirers sought information on Paragraph 3 of this order delegating authority to the Secretary of the Army "to assign the right to apply D.O. ratings to certain prime or subcontractors on orders for delivery of production equipment specifically required to support authorized procurement orders of the Department of Defense." A.C.M.I. members were advised that identical orders have been issued to the Secretaries of the Navy and the Air Force.

Two Scholarships Awarded At N.C. State

Fay E. Larrison of Raleigh, N. C., a junior in the School of Textiles at N. C. State College, has been awarded the Owens-Corning Fiberglas Corp. scholarship for the current academic year, Dean Malcolm E. Campbell announced recently. The scholarship, valued in excess of $1,000, will cover Mr. Larrison's tuition and fees for both his junior and senior years and will provide an additional expense allowance of $50 per month during a 20-month period.

Dean Campbell said the selection of Larrison for the valuable award was based upon his scholastic achievements, his leadership abilities, potential executive qualities, and his participation in extra-curricular activities. He won the award in competition with the other members of the junior class now enrolled in the school of textiles.

The Owens-Corning Fiberglas Corp., Dean Campbell said, has also extended to Larrison an opportunity to work in one of its plants during the Summer of 1951. The corporation, however, does not place any obligation upon the holder of the scholarship to accept employment upon graduation. Two officials of the Owens-Corning Fiberglas Corp. assisted a State College faculty committee in screening the applicants and in making the final selection. The corporation's representatives were Ed Penney of New York City and Ed Sauvaine of Atlanta, Ga.

Joseph L. Clements of North Wilkesboro, N. C., a senior in the School of Textiles at N. C. State College, has been chosen as the winner of the $500 Textron scholarship for the 1950-51 academic year, Dean Campbell announces. Dean Campbell said that Mr. Clements is the second student to receive the scholarship award, which was established in the school of textiles by Textron, Inc., of Lowell, Mass., and is administered by S. H. Lander, vice-president, Textron Southern, Inc., Anderson, S. C. The first recipient of the honor was William M. Barnhardt of Charlotte, N. C., who was selected last year.

Mr. Clements was chosen, Dean Campbell said, because of "his outstanding scholastic accomplishments and a demonstration of unusual qualities of leadership." The student, Dean Campbell continued, has also shown that he has abilities which will qualify him for leadership in the American textile industry. A top-ranking student, he has been active in intra-mural athletics, has served as secretary of the Interfraternity Council at State College, is a past president of Tau Kappa Epsilon Fraternity, is a member of the Tompkins Textile Society, and is a member of Sigma Tau Sigma, national honorary textile fraternity.

Cotton Council Forms Advisory Group

Appointment of a 63-man special advisory committee to the National Cotton Council was announced Dec. 7 by Council President Harold A. Young of North Little Rock, Ark. Mr. Young said the group has been appointed to serve during the 13th annual meeting of the council in Biloxi, Miss., Jan. 22-24 and throughout 1951. "Primary purpose of our advisory committee," the council president explained, "is to obtain the benefit of the experience and judgment of these leaders, some of whom are cotton industry members. Others are not directly engaged in any phase of the raw cotton industry but their close co-operation and assistance is of great value to it."

Among those appointed to the commitee were C. A. Cannon, president of Cannon Mills Co., Kannapolis, N. C.; Donald Comer, chairman of the board of Avondale Mills, Birmingham, Ala.; Dr. John H. Dillon, research director of Textile Research Institute, Princeton, N. J.; Arthur B. Edge, Jr., president of Callaway Mills, LaGrange, Ga.; Percy S. Howe, Jr., president of American Thread Co., New York; M. Earl Heard of Shawmut, Ala., director of research for West Point (Ga.) Mfg. Co.; Robert C. Jackson, executive vice-president of the American Cotton Manufacturers Institute; Ellison S. McKissick, president and treasurer of Alice Mfg. Co., Easley, S. C.; Harvey W. Moore, vice-president and treasurer of Brown Mfg. Co., Concord, N. C.; J. M. Reeves, president of Reeves Bros., Inc., New York; and Robert T. Stevens, Jr., chairman of the board, J. P. Stevens & Co., Inc., New York.

1950 Cotton Textile Exports Off 42.8 Per Cent

Exports of American cotton textiles in the first nine months of the current year were 42.8 per cent below the

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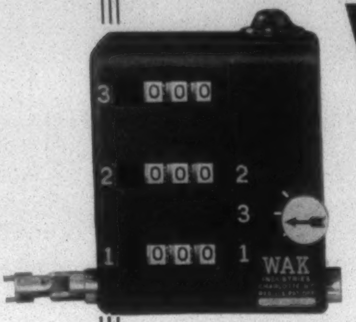

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volume of shipments reported for the same period last year, according to a survey just completed by the Textile Export Association of the United States. Cotton textile shipments in the January-September period of this year, the report states, amounted to 406,962,461 square yards as compared with 711,092,656 square yards in the corresponding period of 1949.

The most pronounced drop was in shipments to Europe which fell 82.18 per cent below the volume in the previous year. African takings were down 76.59 per cent, Oceania 62.14 per cent and Asia 59.84 per cent. Shipments to the North American continent were maintained, showing a decline of only 2.4 per cent. The decline in exports to South America was 16.02 per cent.

The association attributes the sharp contraction in shipments to foreign markets to increased competition from Asiatic suppliers, especially India and Japan, the rehabilitation of European textile industries and the growth of home industries in many countries which formerly imported the bulk of the textiles they needed. Overshadowing all these factors, the association emphasizes, are the currency restrictions which effectively bar American goods from many foreign markets. As an example, the association pointed to the sterling area which imported only 14,029,849 square yards of American cotton goods in the first nine months of this year as compared with 84,068,889 square yards in the same period last year.

1950 Carded Yarn Output Up 25 Per Cent

Production rate of the carded cotton sales yarn industry was at the peak for the year as the spinners began operations in the final month of 1950, the Textile Information Service reported. Another modest increase in yarn output took place during November, marking the fifth successive month in which the yarn mills have stepped up production in an effort to be prepared to fill military requirements and permit equitable distribution of yarn supplies among old customers.

Since January, 1950, the weekly production rate of the carded yarn spinners has shown a net increase of 25 per cent while the backlog of unfilled orders on spinners books as of Dec. 2 was more than double the backlog existing at the start of 1950. Unfilled orders at the beginning of December were 106 per cent above the first week in January figures, and were equal to 15.53 weeks' production and 45.07 times the stocks on hand. At the end of October the backlog was equal to 15.11 weeks' output and 43.35 times the stocks on hand.

The information service, basing its reports on Carded Yarn Association figures covering reports from approximately 1.4 million member spindles, noted that stocks of yarn in spinners' hands, including yarn for future deliveries against unfilled orders, showed little net change during

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November. Inventories on Dec. 2 were equivalent to 34.5 per cent of one week's production. Stocks on Oct. 28 amounted to 34.9 per cent of a single week's output. For the week of Dec. 2, 31.4 per cent of output consisted of knitting yarn; 54.8 per cent weaving yarn, and 13.8 per cent all others; in the week ended Oct. 28, the percentages were 31.8, 54.7 and 12.5 respectively.

November Rayon Shipments Are Listed

Rayon shipments in November totaled 104,600,000 pounds, a decline of three per cent compared with October but a gain of five per cent over November, 1949, according to the *Rayon Organon,* statistical bulletin of the Textile Economics Bureau, Inc. For the first 11 months of 1950, total rayon shipments amounted to 3,136,100,000 pounds, a gain of 30 per cent over the corresponding period of 1949.

Filament rayon shipments during November totaled 79,600,000 pounds, four per cent less than October but five per cent over November, 1949. Rayon yarn shipments were made up of 26,500,000 pounds of viscose high tenacity yarn, 27,000,000 pounds of viscose-cupra textile yarn, and 26,100,000 pounds of acetate yarn.

Staple plus tow shipments in November amounted to 25,000,000 pounds, of which 15,500,000 pounds were viscose staple and 9,500,000 pounds were acetate staple. Staple shipments showed a loss of one per cent compared to the previous month but were three per cent over those of November, 1949. In the first 11 months of 1950 staple shipments aggregated 274,600,000 pounds, of which 171,300,000 pounds were viscose and 103,300,000 pounds were acetate.

Supplementing the domestic shipments in the final month of the third quarter, a total of 7,832,000 pounds of rayon staple were imported from abroad in September. Cumulative imports by the United States in the first nine months of 1950 totaled 57,245,000 pounds, a new record for the period. Imports during the first three quarters of the year were eight times greater than those in the corresponding period of 1949 and more than double the previous January-September record in 1948. The total available supply in the first three quarters of the year amounted to 28,400,000 pounds. The imported staple during that period constituted 20 per cent of the domestic supply, a percentage greater than in any year since 1939.

Recent figures on import manifests indicate that during the last quarter of the year, staple will be coming in at an accelerated rate. The *Organon* estimates that in the final three months of 1950 a total of 30,000,000 pounds will have been imported, bringing the figure of staple imports

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in that period to about 28 per cent of total staple available for domestic consumption.

Principal exporters of staple to the United States during the first three quarters of the year were: France supplied 22 per cent, United Kingdom 17 per cent, Belgium 15 per cent, Switzerland ten per cent, and Norway nine per cent.

A drop in rayon staple imports from Belgium and the Netherlands after the first of the year is anticipated, according to the *Organon*. Belgium and the Netherlands producers have advised importers here that while they will make some quantities available, they will be substantially reduced from the amounts shipped during the fourth quarter of 1950. Reductions of shipments in the first quarter of 1951 will not be permanent, it was indicated, and increase in monthly shipments for the balance of the year are expected from these countries.

In its annual review of the wool situation, the *Organon* notes that according to U. S. Department of Agriculture estimates, the world wool production in the 1950-1951 season will be 4,000,000,000 pounds, grease basis, a gain of 3½ per cent over the previous season and the highest output since the five seasons ending with 1943-1944. The low point was reached in 1947-1948 when a total of 3,720,000,000 pounds were produced.

Compared with the previous season, wool production will vary in different countries throughout the world. In the United States, for example, a small increase is anticipated this year, but production is still at levels that are 40 per cent under pre-war, due to a decreasing sheep population because of favorable prices offered for lambs and sheep for slaughter and the substantially higher expense of sheep and wool growing.

Almost all other wool producing countries are expected to increase their output this season, but the rate of increase in New Zeland will, like in the United States, show very little change. In Australia, the most important wool producing country, current favorable conditions indicate that the 1950 clip should equal or surpass the record output during World War II years. By geographic areas, the changes in estimated wool output from 1949 to 1950 are as follows: North America minus one-half per cent; Europe (except U.S.S.R.) plue five per cent; U.S.S.R. (Europe and Asia) plus three per cent; Asia (except U.S.S.R.) plus six per cent; South America plus three per cent; Africa plus 4½ per cent; Oceania plus three per cent.

On a scoured basis, the available wool supply according to figures drawn from the Commonwealth Economic Committee of London, will total 3,449,000,000 pounds or 350,000,000 pounds less than the supply available in the 1949-1950 season. This figure is made up of the current season production of 2,281,000,000 pounds, scoured basis, and stocks on hand at the beginning of the season. World production on a scoured basis shows a one per cent increase over the previous season.

The surplus stocks of wool held by governmental type organizations such as the Commodity Credit Corp. and the United Kingdom Wool Disposals, Ltd., (Joint Organization) have been reduced to negligible proportions. The stocks held by the trade have held close to 1,000,000,000 pounds over the last several years. With consumption around the 2,500,000,000 pound level, there has been a net disappearance of around 300,000,000 pounds of wool each year. The current available supply in the world today, according to the *Organon* is 1-1/3 year's supply based on the high 1949-1950 consumption rate.

Owen Fitzsimons of Charlotte, N. C., president of the Carded Yarn Association, recently announced that the group will hold its 1951 annual meeting Oct. 4-5 at Pinehurst, N. C.

SOUTHERN SOURCES OF SUPPLY for Equipment, Parts, Material, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information, service, equipment, parts and materials, and believe this guide will prove of real value to our subscribers.

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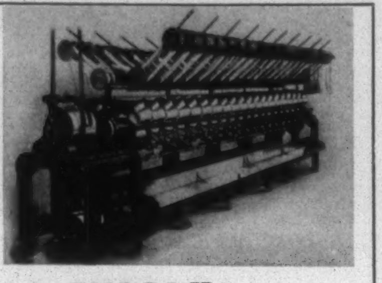

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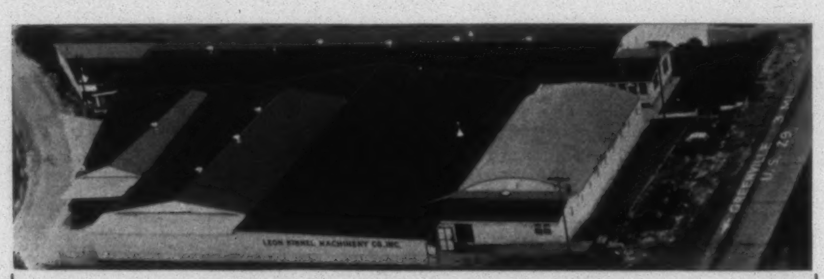

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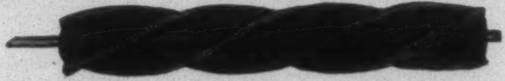

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Before Closing Down

— TEXTILE INDUSTRY HAPPENINGS AS THE MONTH ENDED —

PERSONAL NEWS

James G. Faucette, overseer of spinning at Eno Cotton Mills, Hillsboro, N. C., a subsidiary of Cone Mills Corp., retired recently after 53 years with the company. . . . Bascom B. Brafford, assistant overseer of the spinning department at Cone's White Oak Plant, Greensboro, N. C., has retired after being with the firm since July 1, 1920. . . . William L. Garner is retiring from his position as assistant overseer in the carding department at the Edna Plant, Reidsville, N. C. Mr. Garner has been with the company since March 15, 1940.

A. W. Dillard has been appointed to the sales and service staff of Atlanta (Ga.) Brush Co. Mr. Dillard is well qualified for the position, having had 25 years' experience in the firm's production department. His thorough knowledge of brush making, gained through these years of experience, will enable him to be of real service to Atlanta Brush Co. customers in working out their brush and cleaning problems.

John Brasch, superintendent of the Smithfield (N. C.) Plant of Burlington Mills Corp., and immediate past-president of the Smithfield Kiwanis Club, was a delegate to the recent Kiwanis convention held at Spartanburg, S. C. . . . Smith Crow, Jr., formerly with the Steele Plant at Cordova, N. C., has been named assistant superintendent of Flint No. 2 at Gastonia, N. C., succeeding J. R. Timmerman, who was promoted to superintendent of the Modena Plant at Gastonia. . . . John Lathem, former general superintendent of the Julliard & Co. plant at Aragon, Ga., has joined the staff of Rayon Spinning Division Manager Arthur Burnet. Mr. Lathem replaces Carl Annas who was transferred to the Bur-Mil plant at Shannon, Ga.

Paul Green has been promoted to engineer of the Enka, N. C., plant of American Enka Corp. A 1938 graduate of N. C. State College, Mr. Green joined the firm in 1939 as a member of the engineering department. He was advanced to chief plant draftsman in July, 1947, and became assistant to the chief maintenance engineer last January.

Lester Martin, president of Lester Martin & Co., Inc., will be guest of honor at the annual dinner of Yeshiva Torah Vodaath Jan. 7 at the Waldorf-Astoria Hotel in New York City. Mr. Martin is being honored by the organization "in recognition of his long-time support of our school and for his work and philanthropic interest in Jewish life and education." Mr. Martin also is president of Consolidated Textile Co., Inc., Whittenton Mfg. Co., Luther Mfg. Co., and is a director of North American Rayon Corp.

Henry Spears, formerly overseer on the second shift, has succeeded Grady Mullinax as superintendent of weaving at Mooresville (N. C.) Mills. Mr. Mullinax and Ralph V. Blackwood, superintendent of manufacturing, resigned recently. No successor for Mr. Blackwood has been announced.

A number of prominent Southern textile executives have been appointed to National Cotton Council committees, charged with developing the council's industry-wide program for 1951. Committee appointments are: sales promotion—W. N. Banks, J. M. Reeves and J. Craig Smith; utilization research—Norman E. Elsas, M. Earl Heard, Charles C. Hertwig and Fred W. Symmes; foreign trade—C. A. Cannon, Hugh M. Comer and Walter S. Montgomery; production and marketing—A. B. Emmert and A. K. Winget.

Frank P. Barrie has been named to succeed Karl H. Inderfurth, resigned, as sales promotional manager for Universal Winding Co., Providence, R. I.. Mr. Barrie has been with the company for the past 20 years and has been New England sales agent since 1946. He will be succeeded in New England by Edward C. Parish, Jr., who will assume the duties of New England sales agent Jan. 1, 1951, the effective date of Mr. Barrie's appointment. Mr. Barrie will be assisted in his new position by John A. Freed, who has been appointed advertising manager.

OBITUARIES

Allen Gordon Creasman, 46, president and manager of Creasman Steel Roller Co., Gastonia, N. C., died Dec. 12. Surviving are his wife, his mother, one son, two daughters, two brothers and three sisters.

William R. Elsas, 45, president of Fulton Bag & Cotton Mills, Atlanta, Ga., was fatally stricken with a heart attack Dec. 9 while on horseback participating in a hunt club meeting at Tryon, N. C. He died while en route to a hospital. Mr. Elsas was graduated from Georgia Tech in textile engineering and had progressed through minor positions with Fulton Bag & Cotton Mills to president last January. He is survived by his wife, his father, a son, and an uncle, Norman, chairman of the Fulton board.

John Ryder Hindmarsh, foreign sales manager for Platt Bros. (Sales), Ltd., of Oldham, England, died suddenly Dec. 10 while on a business trip to Greenville, S. C. Mr. Hindmarsh, who had been associated with Platt Bros. for 4½ years, had arrived in this country on Dec. 9 in company with Harold Whittaker, also associated with the firm. A noted world traveler, Mr. Hindmarsh had spent much time in the Far East and at one time was foreign correspondent for the *New York Times*. He is survived by a brother in England.

MILL NEWS

LANCASTER, S. C.—Springs Cotton Mills Dec. 16 announced that it has placed contracts with two machine companies to change 315,000 cotton spinning spindles from the long draft type to a new "super-draft Casablanca." The order will require over a year to complete. Officials state that, under the new process, all spinning frames in the mill will be able to operate at drafts of between 40 and 50, using single-process roving run single in the creel.

CHARLESTON, S. C.—United Piece Dye Works Dec. 16 announced plans for construction of a large plant on a 44-acre site about 13 miles north of Charleston. Total cost of the plant and equipment was not disclosed but the first unit of the plant is expected to cost more than $1,000,000 and provide work for 200.

LINCOLNTON, N. C.—L. P. Muller & Co., cotton yarn selling firm of Philadelphia, Pa., recently announced that it has no plans to operate Smith Mills Co. of Lincolnton, whose mortgage on land, machinery and buildings the Muller firm purchased. It is revealed that Muller bought the mortgage only as a temporary financial aid to the management of Smith Mills Co.

TRION, GA.—Riegel Textile Corp. recently announced plans for the expansion of spinning and weaving facilities at its Trion Division. The firm has purchased a modern manufacturing building at Greenville, Ala., in which it plans to produce work gloves and the present glove factory building at Trion will be made available for the housing of machinery in the move to expand spinning and weaving facilities. Tentative orders have been placed for additional cotton mill machinery, delivery of which as now planned will start about the middle of 1952.

ATHENS, GA.—Athens Mfg. Co. has been purchased by Chicopee Mfg. Corp., it was made known recently by G. O. Lienhard, president of the latter company. The acquisition was made to provide additional manufacturing capacity, it is said, with the Athens Mill equipped with 27,700 spindles and 589 looms. Athens produces spun rayon and blended fabrics, shade cloth, sheeting, and mechanical yarns. This is the first rayon weaving plant in the Chicopee set-up, and tends to further diversify the company's production. The company plans to run the looms now on rayon, but may change the production of some of the looms running on cotton to fit in with its requirements. All commitments now on the books will be filled, it is said, with sales understood to be through the first quarter. After these orders have been filled, sales will be handled directly from the Chicopee offices at 47 Worth Street, New York City. New officers of Athens are N. L. Smith, chairman; Mr. Lienhard, president; G. C. Riegger, treasurer, and D. D. Quillian, W. W. McLeod, R. L. Swetenburg, and W. J. Holman, vice-presidents. Chicopee has seven mills in New England and the South manufacturing various cotton textiles including surgical gauze, tobacco and print cloths, diapers, non-woven fabrics, plastic screen cloth and upholstery fabric.

GASTONIA, N. C.—Contract for construction of an addition and alterations to the Flint No. 1 Plant of Burlington Mills Corp. has been awarded to E. R. Morgan of Gastonia. Architect-engineer for the project is Biberstein & Bowles, Inc., of Charlotte, N. C.

BOILING SPRINGS, N. C. — Lancaster Looms, Inc., has been purchased by J. Frank Love, Sr., and associates. Mr. Love and his son, Frank, Jr., personnel director for Dover Mills Co., Shelby, N. C., plan to place the plant in full production early in 1951, it is reported. Application for a charter for Marion Yarn Mills has been filed.

LAKEVIEW, N. C.—Wyandotte Worsted Co. of Waterville, Me., announced Dec. 14 that it is exercising its options to buy a site at Lakeview, six miles north of Southern Pines, to build a plant for the production of woolen cloth. It is reported that Wyandotte plans construction of a plant costing between $4,000,000 and $5,000,000.

ANDERSON, S. C. — A 75 by 170-foot building is now under construction to connect the Ladlassie and Toxaway plants of Textron Southern in Anderson. The general contract for this two-story project is held by the Daniel Construction Co. of Greenville, S. C., and Birmingham, Ala. Reported to represent an investment of $1,000,000 including equipment and modernization of existing buildings, the new building includes a siding and loading dock for the first floor warehouse. A second floor of monolithic concrete will house two slashers and one spooler for additional facilities in the preparation department. The building will have steel columns, brick walls and insulated wood roof with tar and gravel finish. The facilities are being built to permit air-conditioning in the future.

BURLINGTON, N. C.—Employees of Piedmont Weaving Plant, Burlington Mills Corp., have received a second award from Liberty Mutual Insurance Co. for completing two million man-hours without a lost-time accident. The record began March 5, 1948, and reached the two million man-hours mark Oct. 13 of this year. At recent ceremonies a blue and white accident prevention flag emblazoned with one star symbolic of the newest honor was presented to Fred Finley, group manager, and Marvin Mason, plant superintendent, by Engineer William P. Carter, Jr., of Liberty Mutual. First award to the North Carolina company on completion of one million man-hours without a lost-time accident was made Oct. 13, 1948.

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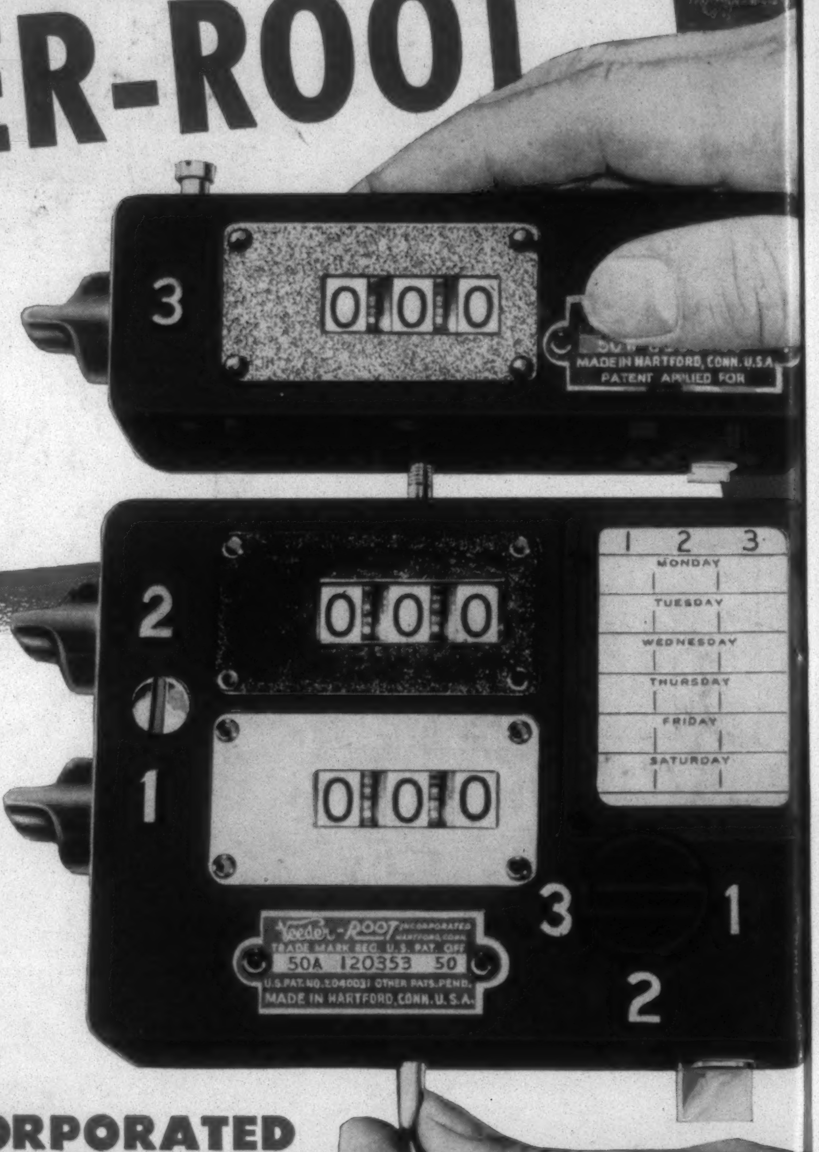
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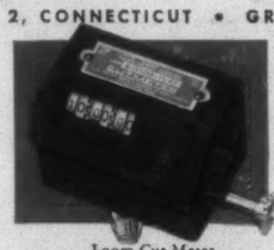

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